CAREER COLLEGE, BHOPAL

UNDER GRADUATE COURSE OUTCOMES

BCA

SUBJECT	PAPER	COURSE OUTCOMES
BCA Ist Year	**Problem Solving and Programming through C**	C is a function oriented, Compiled, general-purpose High level programming language. It is a middle-level language.
		C is a procedure oriented language and includes non-object-oriented operations like primitive variables, pre-processing, expressions, function declarations, and function calls.
	Digital Computer Organization	Apply the principles of number system, binary codes and Boolean algebra to minimize logic expressions
		Design various combinational and sequential circuits like encoders , decoders and counters using multiplexers, and flip - flops
	Fundamental of Computer	It includes the basic and preliminary concepts of computers. It discusses about the various units and components of Computer System.
		The course also comprises basics of computer hardware and software including the operating system and its concepts.
		This is the basic step for develop an understanding about computer system.
	Office Automation	To perform presentation skills To perform documentation
		To perform accounting operations
		To perform presentation skills
	Business Maths	The main objective of this course is to develop an understanding of mathematical concepts and various principles of multivariate calculus, vector and matrix algebra, differential equations and their applications in business and economics.
		Students will be able to understand basic terms in the areas of business calculus and financial mathematics, independently solving of business problems.
		Students will be able to understanding, problem formulation and solution, graphing, and computer application.
BCA IInd Year	**Programming with C++ & Data Structure**	Dicusses concepts of object oriented paradigm with principles of classes, objects and functions.
		Apply algorithms, flowcharts and applications of graphs and trees to simplify real time problems.
		To understand the abstract data types stack, queue, deque, and list.
	Software Engineering	Plan a Software Engineering life cycle , including the specification, design, implementation, and testing of software systems that meet specification, performance, maintenance and quality requirements
		To develop understanding of advance software engineering tools essential for software project management, time management and software reuse.
	Operating System	Explain various memory management techniques and concept of thrashing
		Recognize file system interface, protection and security mechanisms.
		Explain the various features of distributed OS like Unix, Linux, windows etc.
	RDBMS Concepts & Oracle	Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models.
		Learn and apply Structured Query Language (SQL) for database definition and database manipulation.
	Web Technology & application development using .Net & C#	Explain the history of the internet and related internet concepts that are vital in understanding web development.
		Discuss the insights of internet programming and implement complete application over the web.
		Java Script and CSS etc. and identify the environments and applications in the market of web sites designing.
	Computer based Numerical and Statistical Techniques	To provide conceptual understanding of various numerical methods, in particular, with reference to numerical solution of non linear equations and system of linear equations
		Important theorems and various formulae to be covered with an objective of assist students to understand the fundamentals, principles and applications.

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BCA III Year	**Computer Network,Internet Technology & Security**	Identify information security goals, classical encryption techniques.
		Understand, compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication
		demonstrate expertise in configuring host and network level technical security controls, to include host firewalls, user access controls, host logging,
	Core Java	To inculcate knowledge on Java Programming concepts
		Knowledge of creating java applications programs that solve simple business problem
		Knowledge of compile and execute java programs using class, object, constructors, destructors, inheritance, etc.
	MIS	The course develop an understanding in students for the importance of Information Systems in management
		It discusses various Information System solutions like ERP, CRM, Data warehouses and the successful implementation of these technology solutions.
		define an information system from both a technical and business perspective and distinguish between computer literacy and information systems literacy.
	Python Programming	To understand why Python is a useful scripting language for developers.
		To learn how to use exception handling in Python applications for error handling.
		To develop the skill of designing Graphical user Interfaces in Python
	E-Governance	understand the concept of e-government, and the associated benefits and drawbacks
		understand the basic principles of biometric identification and verification systems
		understand how a relational database differs from a flat database, including the function and construction of a joining table
	Principles and Practices of Management	Specify how the managerial tasks of planning, organizing, and controlling can be executed in a variety of circumstances.
		Evaluate the global context for taking managerial actions of planning, organizing and controlling.
		Assess managerial practices and choices relative to ethical principles and standards.
B.Sc. (Computer Science)		
B.Sc (CS) - Ist Year	**Programming in C**	C is a function oriented, compiled, general-purpose High level programming language. It is a middle-level language.
		C is a procedure oriented language and includes non-object-oriented operations like primitive variables, pre-processing, expressions, function declarations, and function calls.
	Fundamental of Computer	It includes the basic and preliminary concepts of computers. It discusses about the various units and components of Computer System.
		The course also comprises basics of computer hardware and software including the operating system and its concepts.
		This is the basic step for develop an understanding about computer system.
	Maths(Algebra & Trigonometry)	To inculcate knowledge on knows the selected aspects of classical algebraic structures.
		To inculcate knowledge on triangle properties, vector calculus and Fourier series basic concepts.
	Maths(Calculus and Differential Equation)	To inculcate knowledge on the ability to find the effects of changing conditions on a system.
		To inculcate knowledge on solving algebraic equations of first and second order and basic information on Laplace transforms.
	Maths(Vector Analysis and Geometry)	Developing the expressivity in mathematics thorough inquiry and connecting mathematical concepts.
		Creating the relationship of mathematics with other subjects.
	Physics(Elements of Mathematical Physics, Mechanics & Properties of Matter)	To get know the fundamental knowledge of mechanics, properties of matter and gravitation
		To make able student for explaining the motion and force system
	Physics(Thermodynamics and Statistical Physics)	To familiar with the fundamental principle and laws of Thermodynamics
		To explain historical background of development of laws of thermodynamics
		To understand the use of concept of probability in statistical physics

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B.Sc (CS) - IInd Year	**Object Oriented Programming in C++**	Dicusses concepts of object oriented paradigm with principles of classes, objects and functions.
		Understand dynamic memory management techniques using pointers, constructors, destructors, etc
	Data Structure	Apply algorithms, flowcharts and applications of graphs and trees to simplify real time problems.
		To understand the abstract data types stack, queue, deque, and list.
	Maths (Abstract Algebra)	Be familiar with abstract topics in algebra; mainly groups, rings and their property.
		Appreciate that common properties of certain mathematical objects can be absorpted and studied.
	Maths (Advanced Calculus)	Develop ability to solve problems in the geometry and analysis using in differential forms
		Develop capacity to both prove results and solve problems
	Maths (Differential Equations)	To inculcate knowledge on solving algebraic equations of I and II order.
		Computation the trajectory of a space probe requires the accuracy in numerical solution of a system of ordinary differential equations.
	Physics (Optics)	To familiar with basics of Optics and properties of light.
		To construct interest in students for the knowledge of concepts is physical and geometrical physics
	Physics (Electrostatics, Magneto Statics & Electrodynamics)	To understand the concepts of electric fields, electric flux, electric potential, dielectrics and polarization vector.
		To develop knowledge of applicative use of Coulomb's law, Gauss's law Ampere's law, Faraday's law and Lorentz force.
B.Sc.(CS) - III Year	**Data Base Management System**	Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models.
		Learn and apply Structured Query Language (SQL) for database definition and database manipulation.
	Operating System Concepts	Explain various memory management techniques and concept of thrashing
		Recognize file system interface, protection and security mechanisms.
		Explain the various features of distributed OS like Unix, Linux, windows etc.
	Physics-Quantum Mechanics And Applications Quantum Mechanics	This course will enable the student to get familiar with quantum mechanics formulation.
		After an exposition of inadequacies of classical mechanics in explaining microscopic phenomena, quantum theory formulation is introduced through Schrodinger equation.
		The interpretation of wave function of quantum particle and probabilistic nature of its location and subtler points of quantum phenomena are exposed to the student
		Through understanding the behavior of quantum particle encountering a i) barrier, ii)potential, the student gets exposed to solving non-relativistic hydrogen atom
		Study of influence of electric and magnetic fields on atoms will help in understanding Stark effect and Zeeman Effect respectively
	Physics-Solid State Physics	At the end of the course the student is expected to learn and assimilate the following
		A brief idea about crystalline and amorphous substances, about lattice, unit cell, miller indices, reciprocal lattice, concept of Brillouin zones and diffraction of X-rays by Crystallin materials
		Knowledge of lattice vibrations, phonons and in depth of knowledge of Einstein and Debye theory of specific heat of solids.
		At knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss.
		Secured an understanding about the dielectric and ferroelectric properties of materials.
		Understanding above the band theory of solids and must be able to differentiate insulators, conductors and semiconductors.
		Understand the basic idea about superconductors and their classifications.
	Maths-Linear Algebra and Numerical Analysis	Apply mathematical methods involving arithmetic, algebra, geometry, and graphs to solve problems.
		Represent mathematical information and communicate mathematical reasoning symbolically and verbally.
		Interpret and analyze numerical data, mathematical concepts, and identify patterns to formulate and validate reasoning
	Maths-Real Analysis	describe the fundamental properties of the real numbers that underpin the formal development of real analysis
		demonstrate an understanding of the theory of sequences and series, continuity, differentiation and integration
		demonstrate skills in constructing rigorous mathematical arguments
		demonstrate skills in communicating mathematics.
	Maths-Discrete Mathematics	Understand the notion of mathematical thinking, mathematical proofs, and algorithmic thinking, and be able to apply them in problem solving.
		Understand the basics of discrete probability and number theory, and be able to apply the methods from these subjects in problem solving.
		Be able to use effectively algebraic techniques to analyse basic discrete structures and algorithms.
		Understand asymptotic notation, its significance, and be able to use it to analyse asymptotic performance for some basic algorithmic examples.

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B.Sc. (Information Technology)

B.Sc (IT) - Ist Year	**Programmining and Problem Solving Through C and C++**	C is a function oriented, compiled, general-purpose High level programming language. It is a middle-level language.
		C is a procedure oriented language and includes non-object-oriented operations like primitive variables, pre-processing, expressions, function declarations, and function calls.
		Dicusses concepts of object oriented paradigm with principles of classes, objects and functions.
		Understand dynamic memory management techniques using pointers, constructors, destructors, etc
	Introduction to IT & Comp. Org.	Implementing concepts of number system, binary codes, various logic gates and Boolean algebra to minimize logic expressions.
		Performing common basic functions like editing, formatting, printing, scanning etc using tools.
	Maths(Algebra & Trigonometry)	To inculcate knowledge on knows the selected aspects of classical algebraic structures.
		To inculcate knowledge on triangle properties, vector calculus and Fourier series basic concepts.
	Maths(Calculus and Differential Equation)	To inculcate knowledge on the ability to find the effects of changing conditions on a system.
		To inculcate knowledge on solving algebraic equations of first and second order and basic information on Laplace transforms.
	Maths(Vector Analysis and Geometry)	Developing the expressivity in mathematics thorough inquiry and connecting mathematical concepts.
		Creating the relationship of mathematics with other subjects.
	Physics(Elements of Mathematical Physics, Mechanics & Properties of Matter)	To get know the fundamental knowledge of mechanics, properties of matter and gravitation
		To make able student for explaining the motion and force system
	Physics(Thermodynamics and Statistical Physics)	To familiar with the fundamental principle and laws of Thermodynamics
		To explain historical background of development of laws of thermodynamics
		To understand the use of concept of probability in statistical physics
B.Sc (IT) - IInd Year	**Operating System**	Explain various memory management techniques and concept of thrashing
		Recognize file system interface, protection and security mechanisms.
		Explain the various features of distributed OS like Unix, Linux, windows etc.
	Internet program Using Java	To inculcate knowledge on Java Programming concepts
		Knowledge of creating java applications programs that solve simple business problems.
		Knowledge of compile and execute java programs using class, object, constructors, destructors, inheritance, etc.
		Knowledge of creating and using of packages, multithreading, exception handling
	Maths (Abstract Algebra)	Be familiar with abstract topics in algebra; mainly groups, rings and their property.
		Appreciate that common properties of certain mathematical objects can be absorpted and studied.
	Maths (Advanced Calculus)	Develop ability to solve problems in the geometry and analysis using in differential forms
		Develop capacity to both prove results and solve problems
	Maths (Differential Equations)	To inculcate knowledge on solving algebraic equations of I and II order.
		Computation the trajectory of a space probe requires the accuracy in numerical solution of a system of ordinary differential equations.
	Physics (Optics)	To familiar with basics of Optics and properties of light.
		To construct interest in students for the knowledge of concepts is physical and geometrical physics
	Physics (Electrostatics, Magneto Statics & Electrodynamics)	To understand the concepts of electric fields, electric flux, electric potential, dielectrics and polarization vector.
		To develop knowledge of applicative use of Coulomb's law, Gauss's law Ampere's law, Faraday's law and Lorentz force.
B.Sc.(IT) - III Year	**DBMS and RDBMS using Oracle**	Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models.
		Learn and apply Structured Query Language (SQL) for database definition and database manipulation.
	Information Technology Trends	Describe the importance of IT enabled services and challenges.
		Recognize enterprise IT architecture for Information technology.
		Illustrate various IT web services for betterment of knowledge.
	Physics-Quantum Mechanics And Applications Quantum Mechanics	This course will enable the student to get familiar with quantum mechanics formulation.
		After an exposition of inadequacies of classical mechanics in explaining microscopic phenomena, quantum theory formulation is introduced through Schrodinger equation.
		The interpretation of wave function of quantum particle and probabilistic nature of its location and subtler points of quantum phenomena are exposed to the student
		Through understanding the behavior of quantum particle encountering a i) barrier, ii)potential, the student gets exposed to solving non-relativistic hydrogen atom
		Study of influence of electric and magnetic fields on atoms will help in understanding Stark effect and Zeeman Effect respectively

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	Physics-Solid State Physics	At the end of the course the student is expected to learn and assimilate the following
		A brief idea about crystalline and amorphous substances, about lattice, unit cell, miller indices, reciprocal lattice, concept of Brillouin zones and diffraction of X-rays by Crystallin materials
		Knowledge of lattice vibrations, phonons and in depth of knowledge of Einstein and Debye theory of specific heat of solids.
		At knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss.
		Secured an understanding about the dielectric and ferroelectric properties of materials.
		Understanding above the band theory of solids and must be able to differentiate insulators, conductors and semiconductors.
		Understand the basic idea about superconductors and their classifications.
	Maths-Linear Algebra and Numerical Analysis	Apply mathematical methods involving arithmetic, algebra, geometry, and graphs to solve problems.
		Represent mathematical information and communicate mathematical reasoning symbolically and verbally.
		Interpret and analyze numerical data, mathematical concepts, and identify patterns to formulate and validate reasoning
	Maths-Real Analysis	describe the fundamental properties of the real numbers that underpin the formal development of real analysis
		demonstrate an understanding of the theory of sequences and series, continuity, differentiation and integration
		demonstrate skills in constructing rigorous mathematical arguments
		demonstrate skills in communicating mathematics.
	Maths-Discrete Mathematics	Understand the notion of mathematical thinking, mathematical proofs, and algorithmic thinking, and be able to apply them in problem solving.
		Understand the basics of discrete probability and number theory, and be able to apply the methods from these subjects in problem solving.
		Be able to use effectively algebraic techniques to analyse basic discrete structures and algorithms.
		Understand asymptotic notation, its significance, and be able to use it to analyse asymptotic performance for some basic algorithmic examples.
B.Sc. (Electronics)		
B.Sc. (Electronic) - I Year	**Basic of Semiconductor and devices**	Understand different electronic passive component and their functioning.
		Characterize semiconductors, diodes, transistors.
		Design simple combinational and sequential logic circuits.
	Electronic Circuits and Fundamental of Digital Electronics	Design half wave and full wave rectifiers with filters.
		Realize simple amplifier circuits using BJT and FET.
		Study and analyze the behavior of FETs and its type.
	Maths(Algebra & Trigonometry)	To inculcate knowledge on knows the selected aspects of classical algebraic structures.
		To inculcate knowledge on triangle properties, vector calculus and Fourier series basic concepts.
	Maths(Calculus and Differential Equation)	To inculcate knowledge on the ability to find the effects of changing conditions on a system.
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B.Sc. (Electronic) - II Year	**Digital Electronics and Microprocessor**	To study the Number systems and the inter conversion between them, Boolean algebra and the simplification of logic circuits using Karnaugh map
		To familiar with Convertors Arithmetic circuits, Multiplexing and Demultiplexing operations and a few logic families
		To understand the fundamental of Microprocessor, Instruction set of 8085
	Operational Amplifier and Instrumentation	Learn Differential amplifier, function of operational amplifier and Amplifier parameters
		Study of application of Op-amp.
		Understand the working of Signal generators. Functioning of Timer IC555
	Maths (Abstract Algebra)	Be familiar with abstract topics in algebra; mainly groups, rings and their property.
		Appreciate that common properties of certain mathematical objects can be absorpted and studied.
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		To develop knowledge of applicative use of Coulomb's law, Gauss's law Ampere's law, Faraday's law and Lorentz force.
B.Sc(Electronic)-III Year	**Electronics-Thyristors, Ic Technology, Microprocessor And Electrical Motors**	Describe the working and characteritics curve of elctronics(power) devices.
		Apply standard device models to explain/calculate critical internal parameters of semiconductor devices
		Ability to understand the IC technology of Silicon Crystal and behaviour of the materials.
		Ability to understand the working and behaviour of Switches and Electrical Motors.
		Describe the Intel 8085/8086 architecture with explanation of internal organization of some popular microprocessors/microcontrollers.
	Electronics-Communication Electronics	Apply the knowledge of statistical theory of communication and explain the conventional digital communication system.
		Apply the knowledge of signals and system and evaluate the performance of digital communication system in the presence of noise.
		In depth knowledge of different types of analog communication system and different modulation techniques used in these systems.
		Student understand the basic knowledge necessary for transmitting and receiving information
		Student understand different types of modulation and demodulation
		Student can solve analog and digital modulation problems
		Aiblity to understand the deep knowledge of different tpye Antennas, Television engineering, TV Transmitter and Receiver.
	Physics-Quantum Mechanics And Applications Quantum Mechanics	This course will enable the student to get familiar with quantum mechanics formulation.
		After an exposition of inadequacies of classical mechanics in explaining microscopic phenomena, quantum theory formulation is introduced through Schrodinger equation.
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		Knowledge of lattice vibrations, phonons and in depth of knowledge of Einstein and Debye theory of specific heat of solids.
		At knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss.
		Secured an understanding about the dielectric and ferroelectric properties of materials.
		Understanding above the band theory of solids and must be able to differentiate insulators, conductors and semiconductors.
		Understand the basic idea about superconductors and their classifications.
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		Interpret and analyze numerical data, mathematical concepts, and identify patterns to formulate and validate reasoning

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	Maths-Real Analysis	describe the fundamental properties of the real numbers that underpin the formal development of real analysis
		demonstrate an understanding of the theory of sequences and series, continuity, differentiation and integration
		demonstrate skills in constructing rigorous mathematical arguments
		demonstrate skills in communicating mathematics.
	Maths-Discrete Mathematics	Understand the notion of mathematical thinking, mathematical proofs, and algorithmic thinking, and be able to apply them in problem solving.
		Understand the basics of discrete probability and number theory, and be able to apply the methods from these subjects in problem solving.
		Be able to use effectively algebraic techniques to analyse basic discrete structures and algorithms.
		Understand asymptotic notation, its significance, and be able to use it to analyse asymptotic performance for some basic algorithmic examples.
B.Sc. (Biotechnology)		
B.Sc (Biotechnology) I yr	**Cell structure and Biology**	Discuss cell structure and its various theories.
		Understand structure and functions of cell and its organelles.
		Understand cell cycle and cell division.
		Discuss transport across cell membrane.
		Understand programmed cell death.
	Microbiology	Understand basic concept of microbiology and its classification.
		Discuss the structure and diversity of bacteria, virus, algae and fungi.
		Understand the microbial growth system.
		Discuss the concept of microbial nutrition and metabolism.
		Develop and understand fermentation process.
B.Sc (Biotechnology) II yr	**Biophysics and Biochemistry**	Derive Maxwell's Equation
		Understand the concept of general biophysical methods
		Understand Fundamentals of Biochemistry
		Discuss biomolecules
		Understand the concept of Enzymes.
	Bioinstrumentation, Biostatistics and Bioinformatics	Observe microorganisms through microscope
		Perform Centrifugation techniques
		Perform and discuss Chromatography, Electrophoresis and spectrophotometry
		Apply methods of Biostatistics
		Perform Bioinformatics on Biological databases
B.Sc (Biotechnology) III Yr	**Molecular Biology and Genetic Engineering**	Study the basic concept of DNA, RNA and Replication model of DNA
		Disuss Eukaryotic chromosomal organization and chromatinf structure
		Discuss origin of life
		Understand the techniques of recombinant DNA technology.
		Learn mutation and its types.
	Applied Biotechnology	Discuss Microbial Biotechnology and its techniques.
		Study Plant Tissue Culture techniques and genetic manipulations of plant.
		Discuss Immunology and Animal Biotechnology
		Learn Fermentation Technology
		Discuss Environment Biotechnology

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B.Sc. (Biochemistry)		
B.Sc (Biochemistry) I yr	**Biomolecules**	Get knowledge of application and scope of Biochemistry
		Will understand how water works as a Biological solvent
		Discuss Function and properties of Carbohydrates
		Discuss Function and properties of proteins
		Discuss Function and properties of Nucleic acid
	Biophysics and Biochemical techniques	Understand concept of bioenergetics
		Discuss hydrodynamic methods
		Discuss Function and properties of Carbohydrates
		Will get technical knowledge of chromatography and electrophoresis
		Discuss spectroscopic and Radio isotopic techniques
B.Sc (Biochemistry) II yr	**Enzymology**	Study enzyme classification and isolation techniques
		Measure and expression enzyme activity-enzyme assay
		Discuss enzyme purification and enzyme kinetics
		Understand role of Vitamins and enzyme catalysis reactions
		Study industrial and clinical applications
	Intermediary Metabolism	Understand general features of metabolism, carbohydrate metabolism and glyconeogenesis
		Study Electron transport chain and oxidative phosphorylation
		Discuss Lipid metabolism and biosynthesis of saturated and unsaturated fatty acids
		Learn amino acid metabolism, urea cycle and degradation and biosynthesis of amino acids
		Study Nucleotide metabolism, biosynthesis and degradation of purines and pyrimidines
B.Sc (Biochemistry) III Yr.	**Molecular Biology**	Study the basic concept of Genetic Information
		Get knowledge of DNA replication
		Discuss about transcription and translation techniques
		Learn genetic code and regulation of gene expression
		Get knowledge of Recombinant DNA Technology and Mutation
	Nutrition, Clinical and Environmental Biochemistry	Learn basic concept of Nutrition and Dietry habits
		Study Nutritive and calorific values of foods.
		Study clinical biochemistry and quality control methods.
		Discuss clinical enzymology
		Understand different types of pollution and methods of its prevention.
B.Sc. (Zoology)		
B.Sc. (Zoology) I yr	**Invertebrate**	Understand the basic concept of Invertebrates.
		Discuss about the all the classes and its type study which comes under Invertebrate.
		Understand the general characters of class, subclass, and orders of Invertebrates.
		Understand the binomial classification.
	Cell Biology and Developmental Biology	Discuss cell structure and its various theories.
		Understand structure and functions of cell and its organelles.
		Understand cell cycle and cell division.
		Discuss about the organogenesis and fate map.
		Understand the development of frog and chick.
B.Sc. (Zoology)II yr	**Vertebrates and Evolution**	Discuss Origin of chordates and its classification
		Understand the comparative study of girdles, brain and all systems
		Discuss origin of life, Modern synthetic theories
		Understand the concept of micro, macro and mega evolution
		Discuss about the fossils and its formation
	Animal Physiology and Bio-Chemistry	Studied about the metabolism of Carbohydrate, Fat and Protein.
		Studied the basic concept of immunology, types and its components.
		Get knowledge of enzymology
		Discuss biological oxidation and role of co- enzymes in ETC
		Understand the structure and function of different endocrine glands.

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B.Sc. (Zoology)III yr	**Genetics**	Understood the theories of classical genetics
		Studied the genetic variation through linkage and crossing over, chromosomal aberrations and sex determination.
		Understood the molecular structure of genetic materials and understood the mechanism of gene expression and regulation.
		.Familiar with the tools and techniques of Genetics
		Understood the applications of Genetics
	Ecology and Applied Zoology	Understand the concept of ecology.
		Studied about the environment and wild life conservation.
		Discuss various methods of energy transfer in ecosystem.
		Learn about aquaculture and its productions
		Get Knowledge of Major carp culture.
B.Sc. (Botany)		
B.Sc. (Botany) I yr	**Diversity of Lower Plants**	Know the systematic, morphology and structure and life cycle pattern ofLower Plants (Algae, Fungi , Bryophytes and Pteridophytes).
		Understand the significance of lower group of plants
	Diversity of Higher Plants	Understand the diversity among the seed plants.
		Know about the overview of the general morphology, sexual reproduction and diversity of the phyla Coniferophyta, Cycadophyta, Gnetophyta.
		Understand the origins and distinguishing characters of the angiosperms
		Understand key methods and principles of biological classification and nomenclature
B.Sc. (Botany) II yr	**Structure Development and Reproduction of Flowering Plants**	Learn about the plant tissue system
		Know the organization of root apical meristem and root anatomy
		Understand the organization of shoot apical meristem and shoot anatomy
		Understand the Leaf system and their anatomy
		Understand about the fundamentals of plant embryology
	Plant ecology, biodiversity and phytogeography	Know components and their interaction in an ecosystem.
		Aquire the values of biodiversity
		Explore the methods of conservation of nature
		Understand the phytogeographical regions of India
B.Sc. (Botany)III Year	**Plant Physiology and Biochemistry**	Understand the plant water relation, mineral nutrition and biomolecule structure
		Understand the photosynthesis and palnt respiration process
		Will get the knowledge of enzymology
	Cell Biology and Genetics	To impart understanding of internal cell structure and their organisation.
		To develop the skills for the prepration of smear for study of cell division
		To developthe skills for the understanding of Mendel's law
		Know about the genomic organization or living organisms, study of genes genome, chromosome etc.
		Understand the principle and basic protocols for Plant Tissue Culture.
		Understand the fundamentals of Genetic engineering

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B.Sc. (Microbiology)		
B. Sc. (Microbiology) I Yr	**Cell Biology & General Microbiology**	Discuss cell structure and its various theories.
		Understand structure and functions of cell and its organelles.
		Understand cell cycle and cell division.
		Discuss transport across cell membrane.
		Discuss the structure and diversity of bacteria, virus, algae and fungi.
		Understand the history of Microbiology.
	Tools & Techniques in Microbiology	Understand basic concept of microbiology and its classification.
		Understand the tools used in microbial growth system.
		Discuss the concept of techniques used in microbiology
		Develop and understand fermentation process.
B. Sc. (Microbiology) II Yr	**Biochemistry & Microbial Physiology**	Understand the basic concept of Biochemistry and its applications.
		Learn metabolism of microbes including respiration etc.
		Discuss the composition cell like carbohydrate, proteins lipids.
	Microbial Genetics and Molecular Biology	Understand theories of evolutions of early forms.
		Studied about microbial genetics and different methods of gene transfer in microbes.
		Discuss cloning techniques and various vectors system.
		Learn methods of production of transgenic microbes, animals and plants and their application in Biotechnology.
		Understand genomic and C-DNA libraries.
B. Sc. (Microbiology) III Yr	**Applied and Environment Microbiology**	Studied the basic concept of fermentation, types and its applications.
		Experimental models and raw material used in fermentation.
		Discuss Industrial applications in microbiology.
	Immunology and Medical Microbiology	Discuss Immunity how it works.
		Studied about genetic manipulations of immune diseases.
		Discuss various microbial diseases and there diagnosis.
		Learn production methods of antibiotics.
		Discuss methods for vaccination and there types.
B.Sc. (Chemistry)		
B. Sc. Chemistry I Year	**Physical Chemistry**	Explain Mathematical Concept related to chemistry and utility.
		Understand about gaseous state and related characteristics.
		Explain chemistry of liquid and solid state.
		Discuss chemical kinetics and its scope
		Discuss chemical equilibrium, its laws and applications
		Understand the colloidal solution, its types, properties and purification methods
		Understand radioactivity, theories, types of nuclear reactions and applications
	Inorganic Chemistry	Understand atomic structure and periodic properties of elements
		Understand chemical bonding, types of bonds/interactions and chemistry of Noble gases
		Explain about the periodicity and characteristics of s and p block elements.
	Organic Chemistry	Understand Carbohydrates, classification, nomenclature, properties and structure
		Understand about Fats & oils, detergents and their properties
		Understand Amino acids, classification, nomenclature, structure and properties
B. Sc. Chemistry II Year		Understand about synthetic dyes and heterocyclic compounds
	Physical Chemistry	Define entropy and its sign for compounds, terms and laws related to thermodynamics
		Understanding of solid solution, liquid –liquid solution and partially miscible solution, related properties and applications.
		To know about thermochemistry and to predict heats of reaction using bond energies and compare these values to heat of reaction obtained from Hess' Law or heats of formation calculations.
		Understanding of various type of electrodes
		Describe Carnot cycle and its efficiency.
		Understand Henderson Hazel equation
		Understand the concept of Free energy, related equation and calculations.
		Understand phenomenon of surface chemistry, Classify catalysis and its application
		Describe electrochemistry, Arrhenius equation, Ostwald's Dilution law, Onsagor' equation, their limitations and applicability.
		Understand phase equilibria, terms related, one component, two component and eutectic system.
		Calculate the equilibrium constant for an insoluble salt given solubility data and vice versa
	Inorganic Chemistry	Describe transition elements and their periodicity in the respective series with reason.
		Understanding the chemistry of lanthanides and actinides, similarities, differences and gradations.
		Understanding of molecular orbital theory with respect to octahedral and tetrahedral complexes
		Understand coordination compounds
		Understand concept of acid and bases and different theories
	Organic Chemistry	Explain Nomenclature of ethers and their methods of preparations
		Interpret IR spectra of simple organic compound
		Describe nomenclature, classification, physical properties and chemical properties of Aldehydes, ketones, carboxylic acid and carboxylic acid derivatives.
		Understanding of nomenclature, classification, preparation, physical and chemical properties of alcohols and phenols.
		Understand nomenclature, properties and reactions of compounds of nitrogen

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B.Sc. Chemistry III Year	**Physical Chemistry**	Explain preparation, and properties of Aryl halides.
		Understand elementary quantum mechanics, principles and applications in chemistry
		Understand molecular orbital theory and its comparison with valance bond theory
		Understand the basic terminology and principles of spectroscopy.
		Understand vibrational and rotational spectrum
		Understand the concept, selection rules, principles and applications of Raman Spectra, Electronic Spectra and UV Visible spectrum
		Understand photochemistry, laws related and applicability.
		Understand Woodword Fieser rule and application.
		Describe role of various metal ions, biological role of alkali and alkaline earth metal
		Understand optical activity of compound, dipole moment and its measurement, polarisation and its types
	Inorganic Chemistry	Able to explain Clausius Mossotti Equation, types of magnetism, Magnetic susceptibility and its determination
		Explain theories of hard and soft acids and bases
		Classify structure and bonding in silicones and triphosphonitrile chloride.
		Explain metal carbonyl complexes, synthesis, structure, bonding, and preparation of some organometallic compounds.
	Organic Chemistry	Understand magnetic and electronic properties of transition metal complexes, type of coupling and transitions.
		Understand structure and bonding, hybridization, mechanisms of chemical reaction and types of intermediate
		Understand nomenclature, classification, physical & chemical properties, structure and applications of alkanes and cycloalkanes.
		Understand nomenclature, classification, physical & chemical properties, structure and applications of alkenes, cycloalkenes and dienes.
		Understand principles, selection rules, laws of IR, Raman, NMR spectroscopy.
		Understand organometallic and organosulphur compounds in terms of preparation, physical and chemical properties
B.Com. (Accounting group)		
B.Com. I Year (Accounting Group)	**Financial Accounting**	The objective of this course is to familiarize the students with basic concept & methods of financial accounting in practical way with reference to current scenario.
	Business Mathematics	The course is designed to describe mathematical relations and functions and to explain the relevance and use of different quantitative models and functions in solving business problems.
B.Com. II Year (Accounting Group)	**Corporate Accounting**	The main objective of this course is to help students for accounting procedure in corporate.
	Cost Accounting	The objective of this paper is to provide knowledge about the basic concept, accounting methods and solution of cost accounting.
B.Com. III Year (Accounting Group)	**Income Tax**	The objective of this paper contents is to providing basic conceptual knowledge and information about Indian Income Tax Act 1961.
	Goods and service tax and custom Duty (G.S.T.)	To acquaint the students with basic principles underlying the provisions of goods and service tax and custom duty, laws and to develop a systematic financial system.
B.Com. (Management group)		
B.Com. I Year (Management Group)	**Business Law**	The main objective of this course is to help students in understanding about the rules, regulation and framework of business law.
	Business Organization	The objective is to familiarize students with the concept of Business organization and its scope. It focuses on the formation of these organizations and their working.
B.Com. II Year (Management Group)	**Principle of Management**	The course focuses on the objective to increase both students knowledge of management and students ability to manage effectively.
	Business Statistics	The objective of this paper is to familiarize the students with statistical tools and techniques in current scenario.
B.Com. III year (Management Group)	**Management Accounting**	The objective of this paper is to familiarize the students with various tools and techniques of management accounting which is useful for business management in current scenario.
	Auditing	This course is designed to provide an introduction of auditing to accounting and finance students who are willing to upgrade their knowledge in financial audit techniques, International Standards on Auditing and International Financial Reporting Standards.
B.Com. (Applied Economics)		
B.Com. (Applied Economics) I Yr	**Micro Economics**	The aim of this paper is to acquaint the students with fundamental and basic concept of Micro economics.
	Macro Economics	The aim of this paper is to provide basic knowledge about various concepts of Macro Economics and its practical application.
B.Com. (Applied Economics) II Yr	**Indian Company Act**	To make the students aware about the legal provision of companies which are being adopted accordingly to modern scenario.
	Banking and Insurance	The objective of this course to familiarized with and understand the main framework of banking and insurance. Students should understand the main characteristics of banking and insurance operations.

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B.Com. (Applied Economics) III Year	**Group A : Public Finance**	The objective of this paper is to provide detailed knowledge about public finance.
	Group A - Financial Management	The aim of this paper is to acquaint the students with fundamentals and basic concepts of financial management.
	Group B : Principle of Marketing	The objective of this paper contents is to provide basic conceptual knowledge about marketing management.
	Group B - International Marketing	The aim of this paper is to acquaint the students with fundamentals and basic concepts of International Marketing.
	Group C - E Commerce and Marketing	The objective of this paper contents is to provide basic of E-Commerce and types of E-Payment.
	Group C - Financial Market and Investment Management	The aim of this paper is to acquaint the students with fundamentals and basic concepts of Financial Market & Investment Management.
	Group D - Organization theory and behaviour	The aim of this paper is to provide basic knowledge about organizational behaviour and basic challenges of organizational design.
	Group D - Human Resource Management and Industrial Relation	The aim of this paper is to provide basic knowledge about Human Resource Management and industrial relation.
B.Com. (Computer Application)		
B.Com. (Computer Application) I Yr	**Fundamental of computer and P.C. Software**	To review the basic concepts and functional knowledge in the field of computer application.
		To expose the students to computer application in the field of Business.
	Desk Top Publishing (D.T.P.) and multimedia	To review the basic concepts and functional knowledge in the field of computer application.
		To expose the students to computer application in the field of Business.
B.Com. (Computer Application) II Yr	**Internet and E-Commerce**	The purpose of this course is to give students and overview about Internet and E-Commerce.
	Relational Database Management System	List and explain the fundamental concepts of a relational database system.
		Utilize a wide range of features available in a DBMS package.
		Analyze database requirements and determine the entities involved in the system and their relationship to one another.
		Develop the logical design of the database using data modeling concepts such as entity-relationship diagrams.
		Create a relational database using a relational database package.
		Manipulate a database using SQL.
		Assess the quality and ease of use of data modeling and diagramming tools.
B.Com. (Computer Application) III Year	**Web Designing**	To review the basic concepts and functional knowledge in the field of computer application. and to expose the students to computer application in the field of Business.
	Degital Marketing	To review the basic concepts and functional knowledge in the field of computer application. and to expose the students to computer application in the field of Business.
B.Com. (Taxation)		
B.Com. (Tax procedure and practice) I Yr	**Indian Tax**	The objective of this paper contents is to providing basic conceptual knowledge and information about income tax of India.
	Goods and service tax	The objective of this paper is to understand various concepts of Goods & Service Tax of India and also understand the impact of new regulation on business activities.
B.Com. (Tax procedure and practice) II Yr	**Income Tax Procedure and Practice**	The objective of this paper contents is to provide basic conceptual knowledge and information about income tax.
	Custom Duty Law and Practice	The purpose of this course is to give students an overview of the customs and service tax procedure and practice.
B.Com. (Tax procedure and practice) III Year	**Tax Planning for Induviduals**	The course is designed so as to make students aware of tax planning for individuals. The course also provides students knowledge of the difference between tax avoidance and tax planning.
	Corporate Tax Planning	This course is designed to make the students aware of the corporate tax laws of India and its management.

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B.Com. (Office Management)		
B.Com. I Year (Vocational Group - Office Management and stenography)	**Basic of Computer**	To review the basic concepts and functional knowledge in the field of computer application.
		To expose the students to computer application in the field of Business with reference to office working.
	Basics of stenography	The purpose of this course is to familiarize students with the basic concepts of stenography and its writing techniques based on Pitman & Rishi Agrawal Shorthand.
B.Com. II Year (Vocational Group - Office Management and stenography)	**Office Management**	The aim of this course is to acquaint students to understand the meaning of office management its routine functions, mailing system, correspondence, office machine and its uses etc.
	Stenography with Computer	The purpose of this course is to familiarize students with the basic concepts of stenography and its speed writing and transcription techniques.
		To review the basic concepts and functional knowledge in the field of computer application.
		To expose the students to computer application in the field of Business.
B.Com. III Year (Vocational Group - Office Management and stenography)	**Secretarial Practices**	The aim of this course to give the knowledge of students about role and duties of the secretary and basic function of office and their administration.
	Advamced Stempgraphy with Computer	The aim of this course about advanced concept of advanced stenography and basic knowledge about computer.
B.Com. (Tour and Travel)		
B.Com. I Year (Vocational Group - Tour and Travel Management)	**Tourism concept and products**	The aim of this course is to familiarize the students with a brief background of tourism, its concepts, products, development and scope with special reference to India.
	Madhya Pradesh Tourism	The purpose of this course is to give students an overview about Madhya Pradesh Tourism.
B.Com. II Year (Vocational Group - Tour and Travel Management)	**Travel Agency and Tour Operation**	The aim of this paper is to familiarize students about the scope and function of travel agency and tour packages.
	India as a Tourist Destination	To give the knowledge about historical places and tourist spots of India to give the knowledge about Indian culture traditions geography and biodiversity.
B.Com. III Year (Vocational Group - Tour and Travel Management)	**Tour guiding excorting and interpretation**	To provide the knowledge about tour guide and wild life and different type of touris.
	Tourism Marketing	This course offers students an insight the knoweldge about tourism marketing including product and prizing and role of govement in tourism.
B.Com. (Principle Practice and Management Insurance)		
B.Com. I Year (Vocational Group - Principle practice and management insurance)	**Fundamental of Insurance and Banking**	The objective of this course is to familiarized and understand the main framework of banking and insurance. Students should understand the main characteristics of banking and insurance operations.
	Life Insurance	The aim of this paper is to familiarized to students about the function of insurance and the scope of insurance industries.
B.Com. II Year (Vocational Group - Principle practice and management insurance)	**Fire and marine Insurance**	The objective of this paper is to make students aware about functions and procedure of fire marine insurance.
	Insurance and Financial Legislation	The course is drafted to study the principles of risk management and insurance as they pertain to management decision-making. Students will examine sources of risk, techniques of managing risk, and the forms of insuring devices in the life, health, property, and employee benefits areas.
B.Com. III Year (Vocational Group - Principle practice and management insurance)	**Property and liability Insurance I**	To familiarize students about various forms of property & liability insurance & their benefit.
		To give them the practical knowledge about their application, causes & consequences, claims & their settlement procedure.
	Property and Liability Insurance II	The course is drafted to study the principles of risk management and insurance as they pertain to management decision-making. Students aware about insurance policy and its types, marketing and underwriting of liability insurance.

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B.Com. (Advertising Sales Promotion and Sales Management)		
B.Com. I Year (Vocational Group - Advertising sales promotion and sales management)	**Advertising – I**	The aim of this paper is to acquaint the students with fundamental and basic concept of advertising.
	Marketing communication	The objective of this course is to develop an appreciation and understanding of the individual elements of the marketing communication mix: with particular emphasis on advertising and direct marketing, and including interactive media, sales promotion and public relations.
B.Com. II Year (Vocational Group - Advertising sales promotion and sales	**Advertising – II**	The objective of this course is to familiarize student with fundamental and basic concept about advertising agency and media planning.
	Personal selling and salesmanship	The purpose of this paper is to make the students aware about personal selling and salesmanship strategy in modern scenario.
B.Com. III Year (Vocational Group - Advertising sales promotion and sales management)	**Management of the sales force**	To equip students with the technique of advertising, sales promotion, sales force management etc.To equip them with skills required to motivate and enhance their productivity.
	Online Marketing	The purpose of this course is to give knowledge about internet and technologies, Mobile Commerce, Electronic Payment system, Security aspect in E-Commerce.
B.Com. (Honors)		
B.Com. Honours I Year (Accounting Group)	**Financial Accounting (Paper – I)**	The objective of this course is to familiarize the students with basic concept & methods of financial accounting in a practical way in current scenario.
	Business Mathematics (Paper – II)	The course is designed to describe mathematical relations and functions and to explain the relevance and use of different quantitative models and functions in solving business problems.
B.Com. Honours II Year (Accounting Group)	**Corporate Accounting**	The main objective of this course is to give practical knowledge to accounting procedure and followed in corporate.
	Advanced Accounting and Practice	The subject focuses on advance concept of financial accounting and gives exposure to theory and practical of corporate investment.
B.Com. Honours III Year(Accounting Group)	**Management and Cost Accounting**	The objective of this Paper is to familiarize the students with various tools and techniques of management accounting which is useful for business management in current scenario and also the knowledge about cost concept, absoption and marginal costing and budgetary control.
	Income Tax Law and Practices.	The objective of this paper contents is to providing basic conceptual knowledge and information about Indian Income Tax Act 1961.
B.Com. Honours I Year (Management Group)	**Principle of Management**	The course focuses on the objective to increase both students knowledge of management and enhance students ability to manage everything and efficiently.
	Business Organization	The objective is to familiarize students with the concept of Business organization and its scope. It focuses on the formation of these organizations and their working.
B.Com. Honours II Year (Management Group)	**Marketing Management**	The objective of this course is to familiarize students with the marketing concept, core principles and strategies of marketing.
	Financial Management	The objective of this course is to provide advance knowledge about financial management and its practical application.
B.Com. Honours III Year (Management Group)	**Human Resource Management**	The objective of this course is to sensitize students to the various facets of managing people and to create an understanding of the various policies and practices of human resource management.
	Research Methodology	Understand basic concept and process of research and its methodologies, research process, sampling design, analysis and report writing.
B.Com. Honours I Year (Vocational Group)	**Micro Economics**	The aim of this paper is to acquaint the students with fundamental and basic concept of Micro economics.
	Macro Economics	The aim of this paper is to provide basic knowledge about various concepts of Macro Economics and its practical application.
B.Com. Honours II Year (Vocational Group)	**Paper I - Public Finance**	The objective of this paper is to provide detailed knowledge about public finance.
	Paper II – Advanced Statistics	The objective of this course is to achieve a deep understanding of particular statistical methods and to learn to use some advanced tools for analyzing and developing statistical methods.
B.Com. Honours III Year (Applied Economics Group)	**Banking Law and Practices**	The object of this paper is to provide detailed knowledge about principles of Banking and Indian Banking system.
	Indirect Tax Law and Practices	The aim of this paper is to provide basic knowledge about various concepts about central excise duty, custom duty, central sales tax, VAT etc.
B.B.A.		
B.B.A. I Year	**Financial Accounting**	The objective of this course is to familiarize the students with basic concept & methods of financial accounting in a practical way with reference to current scenario.
	Business Mathematics	The course is designed to describe mathematical relations and functions and to explain the relevance and use of different quantitative models and functions in solving business problems.
	Principles of Management	To help the student to be acquainted with the basic guidelines and principles of management.
	Communication Skills	To educate the students in the skills of communications so as to help them to interact with the society effectively in their career.
	Micro Economics	To help the students to acquire basic knowledge of micro environment concept.
	Business States	The objective of this course is to help the students in understanding the various statistical methods, techniques in business studies and analysis/discussion.

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B.B.A. II Year	**Financial Management**	The objective of this paper is to familiarize the students with various tools and techniques in financial decision making and control.
	Human Resource Management	The objective of this course is to sensitize students to the various facets of managing people and to create an understanding of the various policies and practices of human resource management.
	Organizational Behaviour	This course aims to improve students understanding of human behavior in organization and the ability to lead people to achieve more effectively toward increased organizational performance
	Marketing Management	The objective of this course is to familiarize students with modern marketing concept tools and techniques.
	Project Management	The objective of this course is to familiarize students with multiple project Idea, project management, network techniques, project review and its administrative aspects.
	Marketing Research	The objective of this course is to enhance the students about understanding of the marketing research industry, applications of Marketing Research.
		To explore different approaches of marketing research.
		To be able to exploit Marketing Research data for management decision making.
B.B.A. III Year	**Entrepreneurial Development (Group VII)**	The objective of this course is to equip students with basic skills for starting their own enterprises.
	Management Information System (Group VII)	The objective of this course is to introduce the students with the management information systems and its application in organizations.
	Business Environment (Group VIII)	To make the students understand the changing nature of the business environment in the context of national economy. To understand the economic, social, political, cultural, global factors that determines the business utility of a nation.
	Business Law (Group VIII)	The main objective of this course is to help students in understanding about the Act, rules, regulation and framework of business law.
	Elective A (Marketing) : Consumer Behaviour	To develop an understanding of consumer behavior from a variety of perspectives and understand consumer buying nature and its behaviour.
	Elective A (Marketing) : Advertising Management and Sales Promotion	Through this course Advertisement and Promotion students will learn about the principles and significance of advertisement and sales promotion techniques for setting up business.
	Elective B (Finance): Working Capital Management	To acquaint and equip the students with the conceptual knowledge and Management of Working Capital
	Elective B (Finance): Corporate Taxation	This course is designed to make the students aware of the corporate tax laws of India and its management.
	Elective C (HRM): Human Resource Development	The objective of this course is to sensitize students to the various facets of managing people and to create an understanding of the perforemance appraisal in human resource development.
	Elective C (HRM): Wages and Salary Administration	To aim of this course is to provide the knowledge about wages and salaries administration.
Bachelor of Library and Information Science (B.L.I.Sc.)		
Bachelor of Library & Information Science (B.L.I.Sc.)	**Foundations of Library and information science**	To make students appreciate the basic philosophy and ethics of librarianship.
		To understand the role and evolution of library as a social institution.
		To know about various types of libraries, their nature, objectives and services.
		To create awareness about the role of professional library associations.
		To understand the concept of Resource Sharing and extension activities in libraries.
		To generate awareness about legal, political and ethical aspects of information and its use.
	Management of Libraries and Information Centres	To understand basic functions of administration.
		To be familiar with housekeeping routines and work flow in libraries
		To know about financial management in libraries.
		To be familiar with library statistics and records.
	Knowledge organisation & processing (theory)	**Part-A**
		To understand the importance of library classification in organization of knowledge.
		To know the elements of library classification.
		To understand the formation of subjects in the Universe of Subjects.
		To be familiar with major schemes of classification.
		Part-B
		To understand the objectives, functions and types of library catalogues.
		To understand the fundamentals of cataloguing and catalogue entries.
		To understand the principles and practices of document description.
		To understand the role of cataloguing in retrieving library material

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	KOP Practical (Library classification & cataloguing practical)	**Method-I LIBRAY CLASSIFICATION PRACTICAL**
		To develop skills of classification.
		To develop skills in subject analysis.
		To develop proficiency in using Dewey Decimal Classification to construction ClassNumbers for documents of different disciplines / subjects.
		To develop skills in subject analysis and synthesis of different facets.
		To develop proficiency in using Dewey decimal classification to construction Class
		Method-II LIBRARY CATALOGUING PRACTICAL
	(Classification and Cataloguing Practical DDC 19th Edition and AACR-II)	To develop skills of cataloguing.
		To understand the rules and practices of document description for Books(Monographs) according to Anglo American Cataloguing Rules-II.
		Preparing Catalogue Entries (Main, Added and Reference Entries) for Book (Monographs) using Anglo American Cataloguing Rules- Second revised Edition and assigning subject headings using list of subject headings.
		To understand the rules and practices of document description for non-book materials according to Anglo American Cataloguing Rules-II.
		Preparing Catalogue Entries (Main, Added and Reference Entries) for Non-Book Materials including electronic resources using Anglo American Cataloguing Rules-Second revised including electronic resources using Anglo American Cataloguing Rules- Second revised edition.
	Information sources, Service and user studies	To understand the different types of information sources
		To develop familiarity with standard reference sources.
		To develop skills of critical evaluation of reference sources.
		To understand the nature and purpose of reference and information services.
		To develop skills for reference and information services.
	Information storage and retriveal	To know about information retrieval and its various aspects in details.
		To know about the various indexing and abstracting tools and services.
		To know about the various national and international network systems.
		To identify the various reprography services and techniques .
	Information Technology (Basics)	To acquaint the students with the basic concepts of computers technology.
		To acquaint the students with the basic concept of computer networks.
		To develop familiarity with some library management software.
		To understand various aspects of library automation.
		To know how computers can be used in libraries.
		To discuss impact of computer technology in libraries.

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BPT		
BPT I YEAR		Understand structure and functions of human body.
		Understand detail knowledge about muscles, soft tissues and bones.
		Understand the basics of various organ systems in the body.
	Human Anatomy	Acquire the knowledge of the relative contribution of each organ system in maintenace of the milieu interior [Homeostasis]
		Be able to describe physiological functions of various systems, with special reference to Musculo-skeletal, Neuro-motor,Cardio-respiratory, Female urogenital funcion and alteration in functions with ageing.
		Analyze physiological response & adaptation to environmental stresses with special emphasis on physical activity and temperature.
		Acquire the skill of basic clinical examination, with special emphasis to Peripheral & Central Nervous system, cardiovascular & Respiratory system, & Exercise tolerance/ Ergography.
	Bioelectrical Modalities	This course will enable the student to understand the basic electricity and medical electronics and its application in electrotherapy instruments.
	Biomechanical Modalities	This course will enable the students to understand the basic mechanics and their application in physiotherapy in restoration of physical function.
	Sociology & Psychology	This course will introduce students to the basic sociological concepts principles and social processes, social institutions (in relation to the individual, family and community) and the various social factors affecting the family in rural and urban communities in India.
BPT II YEAR	**Pharmacology & Biochemistry**	The course in Pharmacology and Biochemistry provides the student basic knowledge of Biochemistry and Pharmacology in order to understand the general biochemical process of drugs in the body and their importance in physiotherapy treatment.
	Pathology & Microbiology	Understand the concept of disease process.
		Study the historical background of various microorganisms.
	General Surgery, Obsterics & Gyneacology, E.N.T & Ophthalmology	This course follows the basic course on Anatomy, Physiology, Psychology, Sociology, Pathology and Microbiology and provides knowledge about relevant aspects of general surgery, Plastic surgery, Pediatrics, E.N.T. Ophthalmology, Obstetrics and Gynecology and Radiology with emphasis on physiotherapeutic.
		The objective of this course is that students at the end of course should have a broad understanding about common medical diseases, which they would be handing as a physiotherapist. They should have a brief idea about etiology, pathology and type and degree of disability the patient will have as a result of the disease, so that he/she as a physiotherapist with physician should help the patient to achieve cure and/or ameliorate his/her illness and sufferings
	General Medicine	This course follows the basic course on Anatomy, Physiology, Psychology, Sociology, Pathology and Microbiology and provides knowledge about relevant aspects of General Medicine with emphasis on physiotherapeutics.
		The objective of this course is these students at the end of course should have a broad understanding about common medical diseases, which they would be handing as a physiotherapist. They should have a brief idea about Aetiology, pathology, Type and Degree of Disability the patient will have as a result of the disease, so that he/she as a physiotherapist with physician should help the patient to achieve cure and/or ameliorate his/her illness and sufferings.
	Orthopaedics	This specially marks the students to understand the common traumatic and orthopedic conditions, which commonly cause disability. The syllabus us made keeping in mind to avoid details of diagnosis and pathology, which are beyond, their scope.
		At the end of syllabus and instructional course and demonstrations, the student will be able to understand orthopedic conditions causing disability and manage them by physiotherapy point of view.
	Physiotherapy in Exercise Therapy (Including Yoga)	In these courses, the student will learn principles, techniques and effects of exercise as a therapeutic modality in the restoration of physical function.
		The objectives of this course is that the students will be able to list the indications and contraindications of various types of exercise and demonstrate the different techniques and describe their effects.
	Electrotherapy	In this course the student well learn the principles, techniques and effects of electrotherapy as a therapeutic modality in the restoration of physical function.
		The objective of this course is that the students will be able to list the indications and contraindications of various types of electrotherapy, modalities and demonstrate the different techniques and describe their effect.

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BPT III YEAR	**Neurology and Neurosurgery, Cardiothoracic Diseases & Surgery**	Following the basic science and clinical science courses, this course introduces the student to the neurological conditions which commonly cause disability Particular effort is made in this course to avoid burdening the student with any details pertaining to diagnosis which will not contribute to their understanding of the limitations imposed by neurological pathology on the individual.
		In addition to clinical, the students will be able to demonstrate an understanding of neurological conditions causing disability and their management.
	Cardiothoracic Diseases and Surgery	Following the basic science and clinical science courses, this course introduces the student to cardio-thoracic conditions, which commonly cause disability. Particular effort is made in this course to avoid burdening the student with any detail pertaining to diagnosis which will not contribute to their understanding of the limitations, imposed by Cardio-thoracic pathology on the functioning of the individual.
		The objective of this course is that after lectures and demonstrations, in addition to clinics, the student will be able to demonstrate an understanding of Cardio-thoracic conditions causing disability and their management.
	Physiotherapeutics-I (physiotherapy in orthopedic conditions)	This course serves **to** integrate the knowledge gained by the students in clinical Orthopedics with the skills gained in Exercise therapy, Electrotherapy and Physical evaluation, thus enabling them to apply these in clinical situations of dysfunction due to musculoskeletal pathology.
		The objective of this course is that after lectures, demonstrations, Practicals and Clinics, the student will be able to identify disability due to musculoskeletal Dysfunction, set treatment goals and apply their skills in Exercise therapy and Electrotherapy in Clinical Situations to restore musculoskeletal function.
	Physiotherapeutics-II (Physiotherapy in Neurology and Neurosurgery)	This course serves to integrate the knowledge gained by the student in normal neurology with the skills gained in exercise therapy and Electrotherapy enabling them to apply these in clinical situations of dysfunction due to pathology in the nervous system.
		The objective of this course is that after lectures. Demonstration, Practical, and clinics, the student will be able to identify, Disability due to neurological dysfunction, Set treatment goals and apply their skills in exercise therapy and electrotherapy in clinical situation to restore neurological function.
	Physical Evaluation	These course servers to Integrate the knowledge gained by the student in basic and clinical medical science with the skills gained by basic Physiotherapy subjects. Thus enabling them to apply these in Evaluation of functions and Measurements in General and in Clinical situations of dysfunction of different systems.
		The objective of this course is that after lectures, Demonstrations, practical and clinics, the students will he able to acquire concept of Evaluation of functions and Measurements in general and in disorders of different systems. Thus physical abnormality can be identified and measured by the students to facilitate physiotherapy management programme.
	Biomechanics and Bio-Engineering	This course supplements the knowledge of anatomy and enable the student to have a better understanding of the principals of biomechanics and their applications in musculoskeletal function and dysfunction and bioengineering appliances manufacture and uses.
		The objective of this course is that after lectures demonstrations and practical, the student will be able to demonstrate an understanding of the principles of biomechanics and kinesiology and their applications in health, disease and bioengineering.
BPT IV YEAR	**Physical Diagnosis and Prescription**	This course serves to integrate the knowledge gained by the students in both basic and Clinical Medical science subjects and physiotherapy subjects, thus enabling them to apply these in evaluation of functions and measurements in general and in clinical situations of dysfunctions of systems in order to reach a state of diagnosing the physical problems presented by the patients.
		The objective of this course is that after Lectures Demonstration. Practicals and Clinics, the student's wilt is able to acquire the concept of evaluation of functions and measurements in general and in disorders of different systems. Thus, the student shall be able to diagnose and measure the physical problems presented bythe patients.
	Physiotherapy in Cardiothoracic Conditions	This course serves to integrate the knowledge gained by the students in clinical cardio respiratory conditions with the skills gained in Exercise therapy Electrotherapy thus enabling them to apply those in clinical situations of dysfunction due to cardio respiratory pathology.
		The objective of this course is that lecture, Demonstration, Practicals and Clinics, the student will be able to identify cardio respiratory dysfunction. treatment goals and apply their skills in Exercise therapy and Electrotherapy in clinical ~tuations to restore cardio respiratory function.
	Sports Physiotherapy	This course enables the student to understand about basic principles of Sports training, Mechanism of Sports injuries and their management in physiotherapy.
		The objectives of this course s that after Lectures, Demonstrations, Practical and Clinics, the student will be able to acquire concept of evaluation of sports and Sports injuries, and also will be able to provide Sports Training and Physiotherapy in particular to Sports injuries.

CAREER COLLEGE, BHOPAL		
	Community Medicine	This course enables the student to understand the effects of the environment and the community dynamics on the health of the individual with special emphasis on disability limitation specific protection and rehabilitation.
		The objective of this course is that after lectures, demonstrations, practical, clinics and filed visits, the student will be able to demonstrate and understanding of the influence of social and environmental factors on the health of the individual and society.
	Community Physiotherapy, Field Visits and Physiotherapy Ethics	This course provides knowledge about health care delivery programmes in Rural and urban areas and role of Physiotherapy in both Rural & Urban set ups with special emphasis to various community awareness programmes and preventive aspects of health disorders causing disability.
		This objective of this course is that after Lectures, Demonstrations, Practical and Clinics the students will be able to understand the various community awareness programmes and health disorders causing disability and the role of physiotherapy in community awareness and prevention of health disorders causing disability.
	Rehabilitation Therapy & Biostatistics	The Philosophy and need of rehabilitation.
		The evaluation process and treatment planning
		Principles of Orthotics
		Principles of Prosthetics
		Principal of Rehabilitation
		The objectives of this biostatistics are to install a deep sense of data appreciation and to develop basic statistical skills in collection, compilation, analysis and interpretation of data. After undergoing this course, a student is expected to plan and execute a statistical project quite independently.
BMLT		
BMLT I Year	**Biochemistry**	Explain Biochemistry related to human.
		Understand about lab management.
		Understand about pH, buffer solution and dialysis.
		Perform urine analysis for sugar, protein bile pigment, ketone bodies.
		Understand about serum separation, collection and recording of specimen.
	Microbiology	Define and identify micro-organism.
		Understanding microscope
		Perform basic staining techniques
		Understand germ theory of disease, Koch postulate and abiogenesis.
		Able to prepare culture media
		Understand the virology and parasitology.
	Basic Histology	Explain the basic of histology.
		Understand fixation, staining and processing.
		Perform histological experiments.
	Haematology	Define blood and its components.
		Understand blood group identification.
		Explain different blood tests.
		Understanding of normal value of blood components.
		Perform blood tests related with different diseases.
		Understand blood functioning.
		To know about blood collection , reporting, storage and transportation of samples.
		Describe anaemia.
		Describe buffer system
BMLT II Year	**Analytical Biochemistry and Metabolism**	Explain Biochemistry related to human.
		Understand about lab management.
		Understand spectrophotometer and electrophoresis
		Perform ELISA
		Understand about serum separation, collection and recording of specimen.
	Microbiology	Define and identify micro-organism.
		Understand the virology and parasitology.
		Understanding the pathogenic and non-pathogenic micro organism.
		Understand germ theory of disease, Koch postulate and abiogenesis.
		Perform basic microbiological test.
		Able to perform serological tests.
	Basic Cellular Pathology And Allied Techniques	Explain the basic of histology.
		Understand fixation, staining and processing.
		Perform histological experiments.
	Haematology	Define blood and its components.
		Understand blood group identification.
		Explain different blood tests.
		Understanding of normal value of blood components.
		Perform blood tests related with different diseases.
		Understand blood functioning.
		To know about blood collection , reporting, storage and transportation of samples.
		Describe anaemia.
		Describe buffer system

CAREER COLLEGE, BHOPAL		
BMLT III Year	**Biochemistry**	Explain Biochemistry related to human.
		Understand about lab management.
		Understand about pH, buffer solution and dialysis.
		Perform urine analysis for sugar, protein bile pigment, ketone bodies.
		Perform glucose tolerence test
	Microbiology	Define and identify micro-organism.
		Understanding the pathogenic and non-pathogenic micro organism.
		Perform basic microbiological test.
		Able to perform serological tests.
		Understant embryonated egg technique.
		Understand the virology and parasitology.
	Special Histology and Histochemical Methods	Explain the basic of histology.
		Understand fixation, staining and processing.
		Perform histological experiments.
	Applied Haematology	Define blood and its components.
		Understand blood group identification.
		To know about staining of bone marrow smears.
		Understanding of normal value of blood components.
		Perform blood tests related with different diseases.
		Explain leukemia
		Perform platelet function test
		Describe anaemia.
		Describe buffer system
POST GRADUATE COURSE OUTCOMES		
M.Sc. Computer Science		
M.Sc. (CS) - I Semester	**Programming Skills with C++**	Describe the procedural and object oriented paradigm with concepts of classes, functions, data and object
		Understand dynamic memory management techniques using pointers, constructors, destructors, etc
		Describe the advance concepts of early and late binding, function overloading, operator overloading, virtual functions, exception handling, abstraction and polymorphism.
	Computer Organization & Architecture	Understand the organization of memory and memory management hardware.
		Explain the organization of basic computer , its design and the design of control unit.
		Elaborate advanced concepts of computer architecture, Parallel Processing, interprocessor communication and synchronization.
	Disctrete Mathematics Structures	Simplify and examine simple common sense statements including compound statements,implications, inverses, converses, and contrapositives the usage of truth tables and the properties of logic.
		Practice rules of inference, checks for validity, and techniques of proof consisting of direct and indirect proof paperwork, proof by contradiction, proof by instances, and mathematical induction and write proofs using symbolic common sense and Boolean Algebra.
	Office tools	To perform presentation skills To perform documentation
		To perform accounting operations
		To perform presentation skills
M.Sc. (CS) - II Semester	**Data Structures & Algorithms**	Apply algorithms, flowcharts and applications of graphs and trees to simplify real time problems.
		To understand the abstract data types stack, queue, deque, and list.
	Advanced Computer Networks	Identify information security goals, classical encryption techniques.
		Understand, compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication
		demonstrate expertise in configuring host and network level technical security controls, to include host firewalls, user access controls, host logging,
	Advanced RDBMS	Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models.
		Learn and apply Structured Query Language (SQL) for database definition and database manipulation.
	Information Storage Management	To Understand the Concept of Information Storage and Data centre Environment.
		To Know and understand Intelligent Storage System
M.Sc.(CS) - III Semester	**Linux & Shell Programming**	The course comprises the basic general purpose commands of Unix.
		It discusses the applications and modification of the ownership and file permissions through advance Unix commands.
	Compiler Design	The course develop an understanding in students for thefundamental and advance features of Compiler Design.
		It comprises lexical rules and grammars for a programming language to design a compiler.
	Programming Skills with JAVA	To inculcate advance knowledge of Java Programming concepts with GUI features
		Knowledge of creating java applications and applet programs that solve simple business problems.
	Data Warehousing & Mining	The course describes the fundamental and advance concepts and applications of datawarehousing.
		It helps students to design a data warehouse and develop skills to handle the problems arises during implementation of a data warehouse.

CAREER COLLEGE, BHOPAL		
M.Sc.(CS) - IV Semester	**Big Data Analytics**	Understand Big Data primitives
		Understand different mathematical models for Big Data
		Understand needs,challenges and techniques for big data visualization using different tools and implement visualization using one of the tools
		Understand the applications & impact of big data technologies
	Multimedia & Computer Graphics	Discuss various applications of multimedia tools and the methods to implement them.
		State the properties of different media streams; compare and contrast different multicast protocols
	PHP & MySQL	Understand the creation of static webpage using HTML
		Understand the principles behind using MySQL as a backend DBMS with PHP
		Understand the function of JavaScript as a dynamic webpage creating tool
	Enterprise Resource Planning	Understand the basic concepts of ERP.
		Identify different technologies used in ERP.
		Understand and apply the concepts of ERP Manufacturing Perspective and ERP Modules.
		Understand and implement the ERP life cycle.
M.Sc. Biotechnology		
M. Sc. I Sem Biotechnology	**Cell Biology**	Understand Origin of life and development of cell theory
		Learn about the structural and functional organization of cell membrane and ionic transport
		Discuss about the structure and functions of cell organelles
		Understand the concepts of cell cycle and cell signalling
		Discuss cell cycle and cell motility
	Structure, Function and Metabolism of Biomolecules	Get knowledge of application and scope of Biochemistry
		Understand structure and function of proteins
		Discuss Function and properties of Carbohydrates
		Discuss Function and properties of lipids and fats.
		Discuss Function and properties of Nucleic acid.
		Understand metabolisms of biomolecules.
	BT-103: General and Applied Microbiology	Understand the general concept of microbiology
		Discuss the classification of bacteria
		Learn virus structure and classification
		Perform different methods of control of microorganisms by physical and chemical methods
		Discuss microbial ecology and microbial growth system
		Discuss various techniques of microscopy and centrifugation
	Analytical Techniques in Biotechnology	Perform chromatographic analysis using different chromatographic techniques
		Gain knowledge of electrophoretic techniques
		Discuss various methods of radioisotopic techniques
		Learn various spectroscopic techniques
M. Sc. II Sem Biotechnology	**Molecular Genetics**	Discuss history and scope of genetics.
		Understand various laws of Mendel's.
		Learn gene transfer mechanism in microorganisms.
		Discuss mutation and their molecular mechanisms.
		Understand classical and molecular concept of gene.
		Understand lytic and lysogeny cycle.
	Basic Enzymology and Enzyme Technology	Understand the basic concept of nomenclature and enzyme classification.
		Learn enzyme kinetics.
		Discuss about various factors affecting enzyme activity and catalysis.
		Discuss the structure and function of enzyme.
		Perform immobilization techniques.
	Molecular Biology	Understand the basic concept of nucleic acid and their base composition.
		Learn different models of DNA replication.
		Understand the mechanism of transcription and translation.
		Discuss regulation of gene expression in prokaryotes and eukaryotes.
	Immunology and Animal Cell Culture	Understand the basic concept of immunology.
		Discuss complement system and immunological responses.
		Discuss concept of autoimmunity.
		Perform animal cell culture techniques.
		Gain knowledge of specialized techniques like cell immobilization, amniocentesis, FISH etc.

CAREER COLLEGE, BHOPAL		
M. Sc. III Sem Biotechnology	**Genetic Engineering**	Discuss concept of genetic engineering.
		Understand various cloning and expression vectors.
		Discuss various sequencing methods.
		Learn molecular probes and PCR.
		Discuss various molecular markers and DNA chip technology.
	Biostatistics and Bioinformatics	Perform various biostatistics methods.
		Understand the concept of probability.
		Discuss bioinformatics tools and techniques.
		Study sequence comparison and structural bioinformatics tools.
	Plant Biotechnology	Study the concept of Plant Tissue culture methods.
		Understand protoplast culture techniques.
		Discuss plant cloning vectors.
		Study about biological nitrogen fixation and bio fertilizers.
		Understand the concept of transgenic plants and their commercial status.
	Bioprocess and Biochemical Engineering	Study about the basic concept of bioprocess engineering.
		Learn various methods of sterilization.
		Discuss about the measurement and control of bioprocess parameters.
		Understand the downstream process for the recovery of products.
		Learn the energy balance in bioprocess system.
	Applied Biotechnology	Study about microbial strains of industrial importance and their products
		Discuss role of biofertilizers and biopesticides
		Understand the method of production of prokaryotic and eukaryotic based feremented products
		Study the role of biotechnology in solving environmental problems such as pollution, water treatment, waste management etc
		Understand the concept of human cloning , ethical issues and risk associated with it.
M. Sc. IV Sem Biotechnology	**Advances in Fermentation and food Biotechnology**	Study the role of fermentation and validation of fermentation process.
		Discuss the role of industrially important microorganisms for food applications.
		Discuss the types of food spoilages and methods of food preservation.
		Learn about the metabolic activity of microorganisms and their influence on product attributes.
		Discuss various strategies and approaches of protein engineering in food technology.
	Applied immunology and Immunodiagnostics	Discuss various immunodiagnostic techniques for disease diagnosis.
		Learn the principle and application of immunohistochemistry and immunoblotting techniques.
		Study the culture maintenance and application of lymphocyte culture.
		Discuss about autoimmune diseases and cancer.
	Principles of Drug designing	Understand drug discovery and management.
		Discuss quantitative structure activity relationship.
		Study thermodynamics and structural principals of lead compounds.
		Learn the concept of stereochemistry and drug designing.
		Study the concept of molecular modelling and drug receptors.
	Training Survey/ Visit/ Dissertation/ Project work	Practical handling of instruments
		Develop research aptitude and ethics.
		Develop research paper/thesis writing skills.
		Get the exposure of research lab and their working strategies.
		Perform individual research and analyse their outcomes.
M.Sc. (Microbiology)		
M. Sc. I Sem Microbiology	**General Microbiology**	Origin of life and development of cell theory
		Learn about the structural and functional organization of cell membrane and ionic transport
		Discuss about the structure and functions of cell organelles
		Understand the concepts of cell cycle and cell signalling
		Discuss cell cycle and cell motility
	Microbial Biochemistry	Get knowledge of application and scope of Biochemistry
		Understand structure and function of proteins
		Discuss Function and properties of Carbohydrate
		Discuss Function and properties of lipids and fats.
		Discuss Function and properties of Nucleic acid.
		Understand metabolisms of biomolecules.
	Microbial Genetics	Understand the concept of genetics in microbiology
		Discuss the concepts of DNA, RNA in microbes
		Perform different methods of genetically control of microorganisms
	Biostatistics, Instrumentation Bioinformatics	Understand the concept of mathematics microbiology
		Discuss the instruments used in microbiology
		Perform different methods of control of microorganisms by physical and chemical methods
		Discuss the new concepts of information technology and computer applications in microbiology
M. Sc. II Sem Microbiology	**Molecular biology & Genetic Engineering**	Understand the basic concept of nucleic acid and their base composition.
		Learn different models of DNA replication.
		Understand the mechanism of transcription and translation.
		Discuss regulation of gene expression in prokaryotes and eukaryotes.
	Microbial Metabolism	Get knowledge of application of Biochemistry
		Understand metabolism of proteins
		Understand metabolism of Carbohydrate
		Understand metabolism of lipids and fats.
		Understand metabolism of Nucleic acid.
		Understand metabolisms of biomolecules.
	Food Microbiology	Learn metabolism of microbes including respiration etc.
		Discuss various integrated pest management and microbial diseases.
		Learn production methods of microbial bio products.
		Discuss methods for food preservation and adulteration.
	Industrial Microbiology	Discuss soil profile, rhizospheric conditions for microbes.
		Studied about genetic manipulations of agricultural plants.
		Discuss various integrated pest management and microbial diseases.
		Learn production methods of microbial bio products.

CAREER COLLEGE, BHOPAL		
		Discuss methods for food preservation and adulteration.
M. Sc. III Sem Microbiology	**Immunology & Immunodiagnosis**	Understand the concept of Infection, their sources
		Understand various types of immunity
		Discuss various technique used in antigen antibody reactions
		Discuss various molecular markers and artificial immunity
	Environmental Microbiology	Understand various microbes of different environment
		Understand the concept of assessment of quality of water.
		Discuss Microbial degradation of organic compounds
		Study Bioremediation and bio mining.
	Agricultural Microbiology	Discuss soil profile, rhizospheric conditions for microbes.
		Studied about genetic manipulations of agricultural plants.
		Discuss various integrated pest management and microbial diseases.
		Learn production methods of microbial bio products.
	Medical Microbiology and Parasitology	Study about the history of pathogenic Microorganism.
		Learn various staphylococcal infections and their causing organisms.
		Discuss about candiadasis group infections.
		Understand the viral pathogens.
		Learn the tropical diseases like malaria, Kalazar etc.
M. Sc. IV Sem Microbiology	**Microbial Diversity**	Study the role genes for differences in microbes.
		Study the classification of microbes.
		Learn the methods for finding diversity.
		Understand the classification of extreamophiles.
		Discuss various methods to get taxonomical details using bio-informatics.
	Advance Techniques and good microbial practices	Discuss various Molecular techniques like PCR, Blotting etc.
		Learn the principle and application of Animal cell culture.
		Study the culture maintenance and application of lymphocyte culture.
		Discuss about autoimmune diseases and cancer.
	Training Survey/ Visit/ Dissertation/ Project work	Practical handling of instruments
		Develop research aptitude and ethics.
		Develop research paper/thesis writing skills.
		Get the exposure of research lab and their working strategies.
		Perform individual research and analyse their outcomes.
M.Sc. Botany		
M.Sc. I Sem Botany	**Biology and Diversity of Virus, Bacteria and Fungi**	To develop the skill of staining and observation of Micro- organisms like gram positive / gram negative bacteria.
		To understand the use of binocular microscopes
		To impart the skills of temporary and permanent slide preparations.
		To enhance ability to identify and classify the fungal group using microscope.
		To familiarize the students with plant diseases and their causative agents.
		To differentiate the characters of prokaryotes & eukaryotes.
	Biology and Diversity of Algae	Students will understand Care and use of microscopes;
		Students will understand the basic concepts of algal biology and ecology and how they apply to different aquatic environments,Algal Pigments
		Students will be familiar with the role of algae in critical environmental issues, such as eutrophication, human health and global climate change.
		Students will be familiar with some of the basic applications of algae in biotechnology, such as the production of food, chemicals and biofuels
	Biology and Diversity of Bryophytes and Pteridophytes.	To impart the skills of temporary and permanent slide preparations.
		To become familier with basic classification,morphology, reproduction,life history of bryophytes and pteridophytes.
		To make students familier with distribution, origin, evolution and affinities of bryophytes.
		To become familier with ecology and economic importance of bryophytes and pteridophytes.
		To make aware about about fossilization process and geological time scale.
	Biology and Diversity of Gymnosperm	Students will understand plant identification key
		To introduce plant nomenclature and classification.
		To become familiar with basic plant morphology.
		To begin to identify plants using morphological characteristics.
		To become familiar with the staining procedure of gymnosperms
		To apply practical skill for preparing permanent slides.
		To become familiar with gymnospermic plant morphology.
		To understand type of fossils of gymnosperms.

CAREER COLLEGE, BHOPAL		
M.Sc. II Sem Botany	**Cell Biology and Genetics**	Students will understand the structures and purposes of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles
		Students will understand how these cellular components are used to generate and utilize energy in cells
		Students will understand the cellular components underlying mitotic and meiotic cell division.
		Students will apply their knowledge of cell biology to selected examples of changes orlosses in cell function. These can include responses to environmental or physiological changes, or alterations of cell function brought about by mutation.
		Students will learn the basic principles of inheritance at the molecular, cellular and organismal levels.
		Students will understand causal relationships between molecule/cell level phenomena.
		Students will test and deepen their mastery of genetics by applying this knowledge in a variety of problem-solving situations.
	Plant Development and Reproduction	Students will understand the organisation of higher plant body
		Students will understand the developemt of shoot and root
		Students will understand the developemt of flower including the male and female reproductive features
		Students will understand the Reproduction including pollination, fertilization, and embryogenesis
	Plant Physiology- I	Students will understand plant water relation
		Students will be acquainted with phytohormones, signalling process and their physiological effects
		Students will understand the floral induction and developmental processes
		Students will understand the Stress physiology
	Plant Ecology-I	Students wil understand division of plant ecology
		Students will be acquainted with the knowledge of community organization
		Students will understand the ecosystem development and stability
		Students will understand the various ecosystem components in the cycling of nutrients, fate ofenergy and flow in the ecosystem
		Students will understand the major biomes and soil type of the world
M.Sc. III Sem Botany	**Systematics of Angiosperms**	Plant systematic is the study of flowering plant diversity. Through the lectures, laboratory exercises, walks and readings students learn:
		How to describe and classify plant diversity.
		The major features and evolutionary origins of vascular plants.
		Identification of plants using dichotomous keys.
		Recognition of important angiosperm families
		Gain some knowledge of the local spring flora
	Molecular Biology and Plant Breeding	Cell organization,
		DNA replication, transcription, protein synthesis and enzymology, selected topics in molecular genetics including DNA recombination as well as gene structure, function and regulation.
		Understand how molecular machines are constructed and regulated so that they can accurately copy, repair, and interpret genomic information.
		Appreciate that molecular biology is a dynamic and ever-changing experimental science.
		Given a particular biological question, identify which experimental techniques are best used to answer that question.
		Molecular tools for studying genes and gene activity.
		Show deeper understanding and theoretical knowledge of current immunological problems - Present and discuss immunological problems.
		Allergies and allergens
		ELISA
	Plant Physiology	Observe evidence of photosynthesis in a water plant.
		Students will understand the assemble and working of Instruments i.e.willmott bubler, Ganongs Respirometer, Spectrophotometer, colorimeter.
		To understand the importance of the relationship of structure to enzyme function.
		To be familiar with how enzymatic reactions are influenced by changes in: Enzyme concentration, Substrate concentration, pH, Temperature, Inhibitor (CuSO4)
		Describe the nitrogen cycle and how it is affected by human activity
		Differentiate among the types of plant hormones and Analyze the different types of plant responses.
	Plant Ecology- II (Conservation and Utilization of Plant Resources)	To enable the students to understand the plant in relation to environmental factors.
		To develop the knowledge of different types of vegetation of India and world.
		To familiarize the student with conservation practices.
		To developed the skills of quality analysis of natural resources (soil, air and water).
		To impart the skills of statistical data analysis of plant diversity.
		To familiarize the student with economic importance of plants.
		Survey of locally available plants

CAREER COLLEGE, BHOPAL		
M.Sc. IV Sem Botany	**Biotechnology and Tissue Culture**	Students will understand history, Scope and Concepts in plant tissue culture
		Students will understand the sterlization techniques
		To familiarize the student with types of culture medium and their sterlization
		Students will understand the effect of growth hormone on tissue culture
		Students will perform the techniques of organogenesis
		Students will perform the techniques of micropropagation, embryogenesis, androgenesis
		To familiarize the student with types of culture medium and their sterlization
		Students will understand the growth chareteristics of E.coli bacteria
		Students will understand the isolation of DNAand its quatitation
		Students will understand the effects of antibiotics on growth of microorganism
		Plant systematic is the study of flowering plant diversity. Through the lectures, laboratory exercises, walks and readings students learn:
	Applied Botany and Instrumentation	Student will learn the history and relevance of herbal drugs in Indian system of medicine
		Students will Understand the extraction techniques for Phytochemical investigations, standardization and applied aspect of herbal drug
		Student learn the aromatherapy and their applied aspects
		Students will understand the importance of Organic farming, Vermiculture, floriculture and mushroom cultivation techniques– career and occupational opportunities
		Student will learn the working principal and application varios bioinstruments i.e. microscope,colorimeter, spectrophotometer etc.
		Student will learn the usage of Computer in biology
	Elective Paper III: Environmental Science	Students will understand the Global climate distribution
		Student will Green house effect, acid rain and ozone depletion Study the importance of monitoring and assessment of environment
		Students will understand Environmental toxicology
		Recognise the need of environmental protection acts and laws
		Study the organizations involved in environmental protection
	Elective Paper IV: Pollution Ecology	Study the pollution status and concerns
		Study the various types of pollution i.e. Air, Water, Soil
		Study the Pollution monitoring and control
M.Sc. Zoology		
M. Sc. Zoology I Sem	**Biosystematics, Taxonomy and Evolution**	Understand the concept of International code of zoological Nomenclature
		Learn about the basic concept of biosystematics taxonomy
		Discuss about theories of organic evolution.
		Understand the concepts of molecular population genetics.
		Learn the evaluation of biodiversity indices.
	Structure and Function of Invertebrates	Get knowledge of origin of metazoan.
		Understand the patterns of feeding in Invertebrates
		Discuss Function and properties of Carbohydrate
		Discuss the process of excretion in lower as well as higher Invertebrates.
		Understand the different Invertebrate larval forms.
	Quantitative Biology, Biodiversity and Wild Life	Understand the basic concept of Biostatistics and its applications.
		Perform probability calculations and sampling methods.
		Understand the principal of biodiversity.
		Understand the medicinal uses of medicinal plant.
		Understand the importance of wild life conservation.
	Biomolecules and Structural Biology	Discuss regulation of gene expression in prokaryotes and Eukaryotes.
		Studied about molecular biology
		Get knowledge of DNA replication
		Discuss about protein synthesis.
M. Sc. Zoology II Sem	**General and Comparative animal Physiology and Endocrinology**	Understand the Comparative physiology of digestion.
		Learn the comparative study of mechanoreception , ,photoreception, chemoreception.
		Discuss the mechanism of hormone action.
		Learn the phylogeny and Ontogeny of Endocrine glands.
	Population Ecology and Environmental Physiology	Get knowledge of Demography.
		Understand the Eco-Physiological adaptation of terrestrial, marine and fresh water environment.
		Get knowledge of environmental pollution and human health.
		Understand the concept of homeostasis.
	Tools and Techniques in Biology	Learn practical application of microscopy and centrifugation techniques.
		Discuss principle and applications of spectroscopy.
		Perform chromatography
		Understand the basic concept of nucleic acid and their base composition.
		Learn different models of DNA replication.
		Understand the mechanism of transcription and translation.
	Molecular Cell Biology and Genetics	Understand the cell signalling
		Understand the concept of sex determination
		Get knowledge of Genetic disease and genome.
		Gain knowledge of specialized techniques like cell immobilization, amniocentesis, FISH etc.

CAREER COLLEGE, BHOPAL		
M. Sc. Zoology III Sem	**Comparative Anatomy of Vertebrates**	Understand the origin of chordate.
		Learn evolution of heart, aortic arches and portal system.
		Understand the comparative study of brain and central nervous system.
		Understand the origin and evolution of ostracoderm.
		Understand the general organisation of gnathostomata.
	Limnology	Understand the scope and development of limnology
		Learn about physic-chemical characteristic of lake, pond etc.
		Understand the significance of aquatic flora and fauna.
		Understand the inter-relationship between zooplankton and phytoplankton.
		Get the knowledge of sewage treatment.
		Understand the causes of pollution and its management
		Understand resources conservation and its legislation.
	Eco-Toxicology	Study the concept of ecosystem.
		Study about remote sensing
		Get the knowledge of reuse and recycling of liquid and solid waste.
		Study about the basic concept of toxicology.
		Discuss about the important heavy metals and their role in environment.
	Aquaculture	Study about the basic concept of aquaculture and its importance.
		Learn various methods of fish culture
		Understand the phenomenon of fish breeding, hypo-physation and stripping.
		Discuss about the fresh water fish farm engenering.
		Learn the fish industry and its by product.
		Get the knowledge of biochemical composition and nutritional value of fish.
M. Sc. Zoology IV Sem	**Animal Behaviour and Neurophysiology**	Study the role of hormone on the control of human behaviour.
		Discuss the basic concept of ethology.
		Discuss the social and reproductive behaviour.
		Learn about the biological rhythm.
		Discuss various receptor physiologies.
	Gamete Biology, Development and Differentiation	Discuss the biochemistry of semen and its composition.
		Learn the endocrinology and physiology of placenta
		Study the biology of sex determination and sex differentiation.
		Discuss about embryonic stem cell.
	Wild Life Conservation Ecotoxicology	Understand the values of wild life and importance of its conservation.
		Discuss the management of wild life.
		Study the role of Indian Board of wild life, Bombay natural history society.
		Learn the concept of protected areas of national parks, Sanctuaries and community reserves.
		Get the knowledge of Bio-telemetry.
	Environment and Biodiversity Conservation	Get the knowledge of sustainable development.
		Develop the concept of Bioaccumulation.
		Get the knowledge of Environmental legislation.
		Study about the Natural Resources and its importance.
		Learn about Biodiversity and its value.
M.Sc. Chemistry		
M. Sc. I Sem Chemistry	**Inorganic Chemistry**	Know about the inorganic polymers.
		Explain the concept of coordination Chemistry,
		Understand the stability of the complexes Explain stereochemistry of complexes.
		Describe structure and bonding of complexes
	Organic Chemistry	Define concepts of stereochemistry,
		Describe conformational analysis and their application in the determination of reaction mechanism.
		Understand the mechanism of aliphatic nucleophilic and electrophilic substitution reactions.
	Physical chemistry	Explain the quantum mechanics and its significance.
		Describe the effect of temperature (Classical and Statistical Thermodynamics) on reaction rate.
		Explain angular momentum and Eigen functions
	Spectroscopy	Define the elements of group theory
		Explain the applications of group theory
		Understand Optical activity and chirality,
		Classify chiral molecules as asymmetric and dissymmetric.
		Brief the dissymmetry of allenes, biphenyls, spiro compounds, trans cyclo octane and cyclononene and molecules with helical structures
		Explain the absolute configuration - R, S notation of biphenyls and allenes.
		Explain Cram's rule.
		Differentiate Stereo specific and stereo selective reactions.
	Mathematics for Chemist	Explain the vectors
		Understand differential calculus, and integral calculus
		Solve differential equation
		understand permutation and probability
	Biology for Chemist	understandcell structure
		Draw the structure of animal and plant cell
		Understand functions of carbohydrates
		Explain amino acids
		Describe peptides, proteins,
		Differentiate between RNA and DNA.

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M. Sc. II Sem Chemistry	**Inorganic Chemistry**	Know Coordination complexes
		Understand the Born-Haber cycle to calculate lattice energy
		Exxplain Electrical and Magnetic properties in Coordination complexes
		Describe metal π complexes, metal clusters
		Explain optical rotatory dispersion and circular dichroism
	Organic Chemistry	To understand the mechanism of aromatic nucleophilic and electrophilic substitution reactions.
		Explain various types of reactions, rearrangements like addition reactions, elimination and pericyclic reactions.
		Describe the synthetic utility of reaction
	Physical Chemistry	Understand statistical thermodynamics and various partition functions
		Describe Quantum statistics and reversible thermodynamics.
		Explain surface chemistry, Electrode - Electrolytic interface.
		Understand the kinetics of polymerization and electrochemistry and related phenomenon.
		Understand the consecutive elementary reactions rate determining steps,steady state approximation, pre-equilibria, Michaelis-Menten mechanism, Lindemann Hinshelwood mechanism, chain reactions
	Spectroscopy and Diffraction Method	To understand the concepts of spectral techniques
		Describe techniques for the quantitative and structural analysis of organic compounds.
		Understand principle and instrumentation of 1H NMR, 13 C NMR and Mass spectroscopy
		Understand principle and instrumentation of 1H NMR, 13 C NMR and Mass spectroscopy
	Computer for Chemist	Understand of computing and computer programming
		Understand C language
		Solve applications based problems in Chemistry
M. Sc. III Sem Chemistry	**Applications of Spectroscopy**	To study the applications of different spectral techniques.
		Understand the working principles of spectroscopic techniques such as uv- visible IR, NMR spectroscopy.
		Understand the instrumentation and working of spectroscopic instruments like atomic mass and fluorescence.
		Learn the application of coupled techniques for quantization of data.
		Learn the application and working of Mossbauer spectroscopy.
	Photochemistry	Understand the laws of photochemistry (Grothus Draper Law and Stark Einstein law)
		Understand the principle of photochemical reactions, kinetics., its reaction mechanism
		Understand photochemistry in alkenes, carbonyl compounds and other photochemical reactions
	Environmental Chemistry	Understand the concept to awareness about environmental chemistry
		Understand the concept about atmosphere and different layer and composition
		Understand the concept. awareness about air pollution and organic inorganic pollutants
		Understand the concept, water pollution and domestic sewage waste water, industrial pollution agriculture pesticide water pollution.
		Understand the different methods of water treatment, water effluents and sewage water
		Understand the greenhouse gases and global warming
	Polymers Chemistry	Understand the basic concepts of polymerization
		Understand the different methods of polymerization
		Understand various techniques of polymerization
		Understand the preparation, properties and applications of PE, PVC, Polystyrene, polyacrilonytrile
		Understand the concept Glass transition temperature
		classify various polymerization, analysis and testing of polymers
	Heavy Chemicals and Petroleum	Understand heavy chemicals
		Purify water by different techniques
		Describe coal and petroleum mining, refining, processes
		Understand applications and their products of respective characteristics.
		Understand the concept of fats and oils
M. Sc. IV Sem Chemistry	**Spectroscopy**	Understand the mathematical foundations and
		Explain selection rules of different branches of spectroscopy
		Apply the principles of spectroscopy for the structural determination of molecules
	Solid state chemistry	Understand basics of solid state reactions
		Explain crystal defects
		Understand electronic property and band theory
		Understand organic solids and liquid crystal
	Biochemistry	understand the role of metal ions in biological systems,
		Explain bioenergetics, transport and storage
		Understand electron transfer, nitrogen fixation
		Understand enzymes and enzyme reactions, chemistry and applications
	Medicinal Chemistry	Understanding of the basic biological and pharmacological interactions by using both natural products and
		Understand total synthesis of bioactive molecules
		Explain use of corresponding knowledge for the development of biologically and clinically active drugs.
		Explain introduction to QSAR
		Understand Chemistry, structure, mode of action of antibiotics, antibacterials, antifungal, antimalarials, and antihistaminic agents.
	Industrial Chemistry-II	Understand manufacture of cement
		Understandsetting of cement
		Explain manufacture of steel and other important alloys
		Understand types, their composition & properties glass fibres
		Understand soaps and detergents
		Explain different categories of insecticides

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M.Com		
M.Com. I Semester	**Management Concept**	To make the students understand the basic conceptual knowledge and scope of management function.
	Business Environment	To make the students understand the changing nature of the business environment in the context of national economy.
		To understand the economic, social, political factors that determines the business utility of a nation.
	Advanced Accounting	The objective of this course is to familiarize the students with practical application of advance accounting methods with reference to current scenario.
	Cost Analysis and Control	The objective of this paper is to provide necessary and detailed information about cost accounting in a practical way.
M.Com. II Semester	**Corporate Legal Framework**	The objective of this course is to provide basic concept, rules, regulation about corporate legal framework.
	Functional Management	The objective of this paper is to provide basic knowledge about functional management.
	Advance statistics Analysis	The objective of this course is to achieve a deep understanding of particular statistical methods and to learn to use some advanced tools for analyzing and developing statistical methods.
	Organization Behaviors	The purpose of this paper is to examine and critically assess a number of key concepts and issues associated with behavior in organizations as well as change models and approaches that set out to explain the management of change in an organizational context.
M.Com. III Semester	**Accounting for Managerial Decision**	The objective of this course is to familiarize the students with various tools and techniques of management accounting which is useful for taking managerial decision in current scenario.
	Tax Planning and Management	The objective of this paper is to provide basic knowledge about Tax Planning and Management to students.
	Entrepreneurship Skill Development	The objective of this course is to familiarize the students with entrepreneurship skill development programs so that they can become self employed.
	Managerial Economics	The objective of this course is to provide detailed information about those aspects of economics which are relevant for decision making.
M.Com. IV Semester (Specialization – Marketing Management)	**International Marketing**	This course will enable students to learn analytical skills required to develop international marketing plans and develop the marketing mix elements in the international environment.
	Rural Agriculture Marketing	The objective of this paper is to provide knowledge about basic concept of Rural Agriculture Marketing.
	Advertisement and Sales Promotion	Through this course Advertisement and Promotion students will learn about the principles and significance of advertisement and sales promotion techniques for setting up business.
	Consumer Behavior	To develop an understanding of consumer behavior from a variety of perspectives (multicultural, interdisciplinary, etc.) and to develop and evaluate marketing strategies intended to influence those behaviors.
M.Com. IV Semester (Specialization – Financial Analysis & Control)	**Security Analysis and Portfolio Management**	The objective of this paper is to providing students an in-depth knowledge of the theory and practice of portfolio management, Important theories, techniques, regulations and certain advancements so that the students can make sound investment decisions in the context of portfolio investment.
	Strategic Financial Management	The objective of this paper is to provide students an in-depth knowledge about strategic financial management.
	Project Planning and Management	This course will make the students learn the fundamentals of project management: how to plan, initiate and execute a project that meets objectives and satisfies stakeholders
	Indian Financial System	The aim of this paper is to acquaint the students with fundamentals and basic concepts of Indian Financial System.
M.Com. IV Semester (Specialization – Accounting)	**Corporate Accounting**	The main objective of this course is to help students for accounting procedure in corporate.
	Cost Administration and Control	The objective of this paper is to provide necessary and detailed information about cost accounting in a practical way.
	Accounting Theory	The objective of this paper is to provide necessary and detailed information accounting theory.
	Institutional Accounting	The objective of this paper is to provide detailed information and knowledge about Institutional accounting and its practical workout.
M.Com. IV Semester (Specialization – Taxation)	**Direct Tax in India**	The objective of this paper contents is to provide basic conceptual knowledge and information about Direct Tax in India.
	Business Taxation	The objective of this paper is to provide students and in-depth knowledge about Business Taxation in India.
	Goods and Service Tax Law and Practice	The objective of this paper is to understand various concepts of Goods & Service Tax of India and also understand the impact of new regulation on distribution of pesticides and kind of changes needed to be done.
	Custom Duty and Practices	The objective of this paper content is to provide basic custom duty and its practices in current scenario.
Masters of Library & Information Science (M.L.I.Sc.)		
Masters of Library & Information Science (M.L.I.Sc.)	**Universe of Subjects & Research Methodology**	Students should be familiar with ethical issues in educational research, including those issues that arise in using quantitative and qualitative research.
		Understand some basic concepts of research and its methodology.
		Identify appropriate research topics.
		Select and define appropriate research problem and parameters.
		Write a report writing and use of graphics in report.
		Students should know how to conduct a statistical test of a hypothesis.
		Familiar with data collection techniques.
	Advanced Library Organization and Management Academic library System	To Known about the role of institutions for promoting the academic libraries.
		Familiar with Indian education commissions and committees reports.
		To identify the HR Policies, Personal Management, Manpower Planning, HRD Quality Improvement Programmes. UGC service Condition and Pay Scales. Refresher Courses and Career Advancement Courses.
		To know about the role of internet and various information centers for promoting library services.

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	Information Processing Retrieval Systems	Familiar with IS&R activities and techniques.
		To know about the indexing systems.
		Understand the major networking system of India and Abroad.
		To well-known with the reprography services and technology.
	Knowledge Organization and Processing (Practical)	**Method-I**
		Classification Practical UDC 3rd Revised Edition
		Known the purpose of library classification
		To identify the UDC scheme.
		Familiar with the need, principles, rules, regulations of UDC classification Scheme.
		To identified the concept of main classes in UDC.
		Proficient with to solve the Title of UDC 3rd Revised Edition.
		Method-II
		Cataloguing Practical AACR-II
		To familiar with describe Entry, Main entry and Added entries.
		To well -known the various sections of main entry of AACR-II.
		To known the sections of various added entries of AACR-II.
		Well- Known with non book materials entries.
		Able to the solve Questions of AACR-II.
	Information Communication and Society	To understand the role of information, data and knowledge in society.
		To know the information generation, information theory and various communication channels.
		To well-known with information diffusion process and knowledge generation cycle.
		Understand the role of information as a Economic point of view.
		To known the various national and international information policies.
	Information Sources, Systems and Programmes	Understands the various physical medium of information.
		To Familiar with various information sources, system and programmes.
		To well-Known the International information agencies in different fields.
		To understand the rural, government and institution information systems.
		Understand the importance of user education programme.
	Information Technology: Applications	An understanding of professional, ethical, legal, security and social issues and responsibilities.
		An ability to analyze the local and global impact of computing on individuals, organizations, and society.
		Recognition of the need for and an ability to engage in continuing professional development.
		An ability to use current techniques, skills, and tools necessary for computing practice
		Internet Technologies :Students will develop a basic understanding of technologies and protocols used on the Internet, and how to effectively use Internet tools technologies including current web-based applications, e-mail, and social networking tools; developing searching strategies; and basic web authoring.
	Information Institutions, Products and Services	Understand the role Referral Centers, Information Analysis and Consolidation Centers
		To well known the different information services.
		To know the diverse information products and online information systems and networks.
		To understand the different national and international information centers.

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MPT		
MPT I Yr Orthopaedics : Orthopaedic Physiotherapy	**Basic Medical Sciences and Principles of Physiotherapy Practice**	Understand basics of physiology
		Understand basics of pathalogy
		Understand basics of pharmacology
		Understand basics of radiology
		Understand basics of rheumatology & geriatric disorders.
	Biomechanics and Kinesiology	Able to revise the basics of biomechanics and kinesiology in BPT.
		Understand aim & objectives of kinesiology in physiotherapy
		The anatomical concepts of bones,joints,muscles & nerves
		The principles of biomechanics in various activities and sports
	Exercise Therapy and Kinesiology	Able to understand the basics of therapeutic exercise
		Able to asses the condition and application of exercise
		Understand the pre & post operative rehabilitation of any surgery
		Understand use and misuse of equipments
		Understand the concept of fitness
	Exercise Physiology and Nutrition	Able to understand the physiological nutritional values during exercise
		Understand the concept of energy conservation and transfer for physical activity
		Study about body composition & weight control
		Understand the changes occurring in various body system due to exercise
MPT II Yr Orthopaedics : Orthopaedic Physiotherapy	**Physical medicine and rehabilitation**	Learns effects various techniques and modalities used in physiotherapy.
		Will undergo clinical training in the health centre on various apparatus of physical medicine
		Study rehabilitation of injuries in upper and lower limbs
		Study rehabilitation in other conditions
	PT in Orthopaedic diseases and orthopaedics fractures	Will be able to understand the pathophysiology, signs and symptoms,medical and physiotherapy management of orthopaedic conditions
		Understand Pt management in various degenerative and infective conditions
		Understand Pt management in traumatology and orthopaedics
	Advanced Physyiotherapy in Orthopaedic surgery	Able to evaluate the surgical condition and give appropriate pre and post physiotherapy management
		Study post surgical complications and their management
		Learn the disability and functional evaluation
	Educational Pscycology(ortho)	To provide students with information with regard to the theoretical constructs used in the interpretation of behaviour to make students appreciate the significance of pscycological application in the field of physiotherapy
		Study the general and behavioural psychology
		Study the clinical psychology
MPT I Yr Neurology : Neurologic Physiotherapy	**Basic Medical Sciences and Principles of Physiotherapy Practice**	Understand basics of physiology
		Understand basics of pathalogy
		Understand basics of pharmacology
		Understand basics of radiology
		Understand basics of rheumatology & geriatric disorders.
	Biomechanics and Kinesiology	Understand aim & objectives of kinesiology in physiotherapy
		The anatomical concepts of bones,joints,muscles & nerves
		The principles of biomechanics in various activities and sports
	Exercise Therapy and Kinesiology	able to understand the basics of therapeutic exercise
		Able to asses the condition and application of exercise.
		The pre & post operative rehabilitation of any surgery
		Understand use and misuse of equipments
		Understand the concept of fitness
	Exercise Physiology and Nutrition	Able to understand the physiological nutritional values during exercise
		Understand the concept of energy conservation and transfer for physical activity
		Study about body composition & weight control
		Understand the changes occurring in various body system due to exercise
		Study the changes or adaptations in body during exposure to different conditions

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MPT II Yr Neurology : Neurologic Physiotherapy	**Physical medicine and rehabilitation**	Learns effects various techniques and modalities used in physiotherapy.
		Will undergo clinical training in the health centre on various apparatus of physical medicine
		Study rehabilitation of injuries in upper and lower limbs
		Study rehabilitation in other conditions
	PT in Neurological Diseases	Able to understand the pathophysiology, signs and symptoms,medical and physiotherapy management of neurological conditions.
		Understand Pt management in neoplasms
		Understand pt management in various infections in CNS
	Advanced Neuro Physiotherapy	Able to evaluate the surgical condition and give appropriate pre and post physiotherapy management.
		The post surgical complications and their management
		Learn the evaluation of neurological disorders
		Learn various therapeutic techniques in rehabilitation
	General and Clinical Psychology	Will provide students with information with regard to the theoretical constructs used in the interpretation of behaviour to make students appreciate the significant of pscycological application in the field of physiotherapy
		Clinical Pscycology is to introduce the students to the field of clinical psychology briefly familiarising them with the causes , symptoms and overall understanding of various physiotherapy methods
MPT I Yr Cardiothoracic : Cardiopulmonary Physiotherapy	**Basic Medical Sciences and Principles of Physiotherapy Practice**	Understand basics of physiology
		Understand basics of pathalogy
		Understand basics of pharmacology
		Understand basics of radiology
		Understand basics of rheumatology & geriatric disorders.
	Biomechanics and Kinesiology	Understand aim & objectives of kinesiology in physiotherapy
		The anatomical concepts of bones,joints,muscles & nerves
		The principles of biomechanics in various activities and sports
	Exercise Therapy and Kinesiology	able to understand the basics of therapeutic exercise
		Able to asses the condition and application of exercise.
		The pre & post operative rehabilitation of any surgery
		Understand use and misuse of equipments
		Understand the concept of fitness
	Exercise Physiology and Nutrition	Able to understand the physiological nutritional values during exercise
		Understand the concept of energy conservation and transfer for physical activity
		Study about body composition & weight control
		Understand the changes occurring in various body system due to exercise
		Study the changes or adaptations in body during exposure to different conditions
MPT II Yr Cardiothoracic : Cardiopulmonary Physiotherapy	**Physical medicine and rehabilitation**	Learns effects various techniques and modalities used in physiotherapy.
		Will undergo clinical training in the health centre on various apparatus of physical medicine
		Study rehabilitation of injuries in upper and lower limbs
		Study rehabilitation in other conditions
	PT In Cardiothoracic Diseases	Able to understand the pathophysiology, signs and symptoms,medical and physiotherapy management of cardiothoracic conditions
		The Pt management in cardiorespiratory disorders
		The adjuncts to chest physiotherapy
	Advance Physiotherapy in Cardiovascular Surgery	able to evaluate the surgical condition and give appropriate pre and post physiotherapy management.
		The post surgical complications and their management
		Learn the methods used in diagnosis of cv diseases
		Learn to manage in ICU
MPT I Yr Obstetrics & Gynecology : Physiotherapy in Obs. & Gynecological Conditions	**Basic Medical Sciences and Principles of Physiotherapy Practice**	Understand basics of physiology
		Understand basics of pathalogy
		Understand basics of pharmacology
		Understand basics of radiology
		Understand basics of rheumatology & geriatric disorders.
	Biomechanics and Kinesiology	Understand aim & objectives of kinesiology in physiotherapy
		The anatomical concepts of bones,joints,muscles & nerves
		The principles of biomechanics in various activities and sports
	Exercise Therapy and Kinesiology	able to understand the basics of therapeutic exercise
		Able to asses the condition and application of exercise.
		The pre & post operative rehabilitation of any surgery
		Understand use and misuse of equipments
		Understand the concept of fitness
	Exercise Physiology & Nutrition	Able to understand the physiological nutritional values during exercise
		Understand the concept of energy conservation and transfer for physical activity
		Study about body composition & weight control
		Understand the changes occurring in various body system due to exercise
		Study the changes or adaptations in body during exposure to different conditions

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MPT II Yr Obstetrics & Gynecology : Physiotherapy in Obs. & Gynecological Conditions	**Physical medicine and rehabilitation**	Learns effects various techniques and modalities used in physiotherapy.
		Will undergo clinical training in the health centre on various apparatus of physical medicine
		Study rehabilitation of injuries in upper and lower limbs
		Study rehabilitation in other conditions
	PT in Obsterics and Gynaecology	Able to understand the pathophysiology, signs and symptoms of obs/gyn conditions.
		Study medical and physiotherapy management of obstetrics & gynaecological conditions
		Understand clinical importance of pre and postnatal exercises
	Advance Physiotherapy in Obstertics and Gynaecology	Able to evaluate the surgical condition and give appropriate pre and post physiotherapy management
		Understand the post surgical complications and their management
		Study diseases of various parts of genital areas
		Understand diagnostic approaches in obs/gyn. Conditions.
	General and Clinical Psychology	To provide students with information with regard to the theoretical constructs used in the interpretation of behaviour to make students appreciate the significant of pscycological application in the field of physiotherapy
		Objectives of Clinical Pscycology is to introduce the students to the field of clinical psychology briefly familiarising them with the causes , symptoms and overall understanding of various physiotherapy methods
MPT I Yr Sports : Sports Physiotherapy	**Basic Medical Sciences and Principles of Physiotherapy Practice**	Understand basics of physiology
		Understand basics of pathalogy
		Understand basics of pharmacology
		Understand basics of radiology
		Understand basics of rheumatology & geriatric disorders.
	Biomechanics and Kinesiology	Understand aim & objectives of kinesiology in physiotherapy
		The anatomical concepts of bones,joints,muscles & nerves
		The principles of biomechanics in various activities and sports
	Exercise Therapy and Kinesiology	able to understand the basics of therapeutic exercise
		Able to asses the condition and application of exercise.
		The pre & post operative rehabilitation of any surgery
		Understand use and misuse of equipments
		Understand the concept of fitness
	Exercise Physiology and Nutrition	Able to understand the physiological nutritional values during exercise
		Understand the concept of energy conservation and transfer for physical activity
		Study about body composition & weight control
		Understand the changes occurring in various body system due to exercise
		Study the changes or adaptations in body during exposure to different conditions
MPT II Yr Sports : Sports Physiotherapy	**Physical medicine and rehabilitation**	Learns effects various techniques and modalities used in physiotherapy.
		Will undergo clinical training in the health centre on various apparatus of physical medicine
		Study rehabilitation of injuries in upper and lower limbs
		Study rehabilitation in other conditions
	Sports Medicine and Physiotherapy	Able to understand the pathophysiology, signs and symptoms in sports injury.
		The medical and physiotherapy management in sports injury
		The prevention of sports injury.
		The cocept acute and overuse injuries.
	Sports Psychology	To provide students with information with regard to the theoretical constructs used in the interpretation of behaviour to make students appretiate the significant of pscycological application in the field of physiotherapy
		Objectives of Clinical Pscycology is to introduce the students to the field of clinical pscycology briefly familiarising them with the causes , symptoms and overall understanding of various physiotherapy methods.